

From boatanchors@theporch.com Fri Jan 10 21:54:00 1997
From: n5off@w5ddl.aara.org
Subject: 390A contract data here/wanted
Message-ID: <552215@w5ddl.aara.org>

As many of you know, I have been keeping 390A contract data for some time.
I've gotten over 300 contributions from you all. Since I think we have quite
a few new readers and rig owners, I'd like to run this trap again.

This is the latest list of contracts and high s.n.'s that I have.

If you have a rig with a contract not shown here (from panel tag or
back of frame, not from a module) or a higher s.n., please contact me
with the info.

Thanks
Tom N5OFF

R-390A			Hi s.n.
Collins	1951	14214-PH-51	971
Collins	1954	375-P-54	310
Motorola	1954	363-PH-54	3427
Collins	1955	8719-P-55	4914
Motorola	1956	0014-PH-56	4909
Motorola	1958	14385-PC-58-A1-51	5866
Stewart-Warner	1959	42428-PC-59	2076
Stewart-Warner	1960	20139-PC-60-A1-51	4511
Electronic Assistance Corp	1960	23137-PC-60	4255
Helena Rubenstein	1960?	? (80 units from Collins)	0
Capehart Corp.	1961	21582-PC-61	4237
Amelco/Teledyne Systems Corp	1962	35064-PC-62	3642
Capehart Corp.for Adler Electronics	1963	20878-PP-63	5
Imperial Electronics/Teledyne Sys	1963	37856-PC-63	3976
Electronic Assistance Corp	1967	DAAB05-67-C-0155	10717
EAC Industries/Hammarlund	1968	consumer	118
Dittmore-Freimuth	1968	DAAB05-68-C-0040	215
Fowler Industries	1984	N 00024-84-C-2027	5
		Total of high s.n. 390A	54,154

From boatanchors@theporch.com Fri Jan 10 21:54:00 1997
From: "Manuel A. Maseda" <mmaseda@gte.net>
Subject: 618S-1A has a new home
Message-ID: <32D6D245.5480@gte.net>

I want to sincerely thank all who took the time to respond to my request to find a new home for the 618S-1A. My only regret is that I don't have about a dozen of them give away. Seems there are a lot of great people out there that really care about keeping the boatanchor tradition alive. The new father is Chris Bowne, AJ1G.

Thanks again,

Manuel WF1J

From boatanchors@theporch.com Fri Jan 10 07:28:58 1997
From: Laird_Tom_N@hpmail1.90.deere.com
Subject: 75A-1 cabinet needed
Message-ID: <H00005a00482e6d2@MHS>

A Collins friend is in need of a cabinet for a 75A-1. If anyone has one for sale (or maybe a parts radio with a cabinet), please contact:

John WA5VVT @ 501-751-6667
(not good in callbook)

rusty OK

Tom Laird WC9M Moline, IL
TL39597@deere.com

From boatanchors@theporch.com Fri Jan 10 13:50:06 1997
From: Ho4bart@aol.com
Subject: ??? about possible HQ-110 improvement
Message-ID: <970110130439_1241961968@emout05.mail.aol.com>

my last posting of the day, honest!

it occurred to me that i might have right on hand a rec to use with the Lakeshore xmtr that i =hope= to get. but i don't much like the selecitivity method in the HQ-110: q-multiplier. it occurs to me that i might build in a mech filter. i could do this nondestructively by using a 7pin plug with a piece of pc board on top it, then the mech filter and another socket where the orig IF tubes goes into. an "adaptor" unit. is this an "approved modification"? (HI). what would you do? and what specific mech / ceramic filter to use? what was the approx orig cost of the hq-110?

it seems to be close in vintage to the lakeshore but probably
the xmtr was more expensive. tnx! hue miller

From boatanchors@theporch.com Fri Jan 10 21:54:00 1997
From: John Kolb <jlkolb@cts.com>
Subject: Re: ??? about possible HQ-110 improvement
Message-ID: <Pine.SCO.3.91.970110193251.24025B-1000000@sd.cts.com>

On Fri, 10 Jan 1997 Ho4bart@aol.com wrote:

> q-multiplier. it occurs to me that i might build in a mech
> filter. i could do this nondestructively by using a 7pin plug
> with a piece of pc board on top it, then the mech filter and
> another socket where the orig IF tubes goes into. an
> "adaptor" unit. is this an "approved modification"? (HI).

The "concept" is approved - Collins used to make plug in addapters
for several receivers. This was a metal box with an octal plug
on the bottom to plug into the tube socket on the receiver, two
7 pin tube sockets at the top of the box for 6BA6's?, and a mech
filter and a few other parts inside the box. The two tubes were
necessary to match the gain of the reomoved octal tube and make
up for the insersion loss of the filter.

Anyone interested in one of these for a HR0-50?

> what would you do? and what specific mech / ceramic
> filter to use?

Pretty much whatever filter you can find at a good price :)
keeping in mind the type of listening you do. The filter is
always in with this approach, so you wouldn't want a 2.1 kHz
filter if you mostly listen to AM. A 6 kHz filter could be
used, however, to improve the deep skirts selectivity, even
if you mostly listen to SSB. Must be an 455 kHz filter for the
HQ-110, of course.

> what was the approx orig cost of the hq-110?

Can't find my Moore's buried on my desk, but around \$120 or
so if I remember correctly

John KK6IL jlkolb@cts.com

From boatanchors@theporch.com Fri Jan 10 07:28:58 1997

From: Scott Robinson <spr@earthlink.net>

Subject: Re: AM Radio ID Help, Please?

Message-ID: <v03007802aefb14ec811a@[153.34.139.251]>

Folks,

>

>I'm unfamiliar with the circuit though. It uses a 35W4 (rectifier), a 50L6

>(audio amp, right?), 12SQ7 (triode/double diode - detector and first audio I

>assume) and a 12SG7, which I think is a pentode. Tuning the radio involves

>moving ferrite slugs in and out of coils that oppose each other, one

>above, one

>below the chassis. There are two paddler caps with screwdriver adjustments,

>accessed from the back. There wasn't any antenna - some owner in the past

>used

>a coil of bell wire as an antenna. I tried building a loop antenna with some

>#28 enameled wire with poor results. But a 25 foot length of wire strung

>across the floor does wonders! What kind of an antenna would have been

>used in

>this receiver?

>

>What kind of a radio is this?

I expect it's a TRF radio, no regeneration, and probalby designed for a random wire length antenna such as you are using. The 12SG7 is an RF pentode, so it woudl be the RF amp.

Regards,

Scott Robinson

spr@earthlink.net

"Wait'll he puts on his stereo headphones..."

From boatanchors@theporch.com Fri Jan 10 13:50:06 1997

From: "Lon W. Cottingham" <k5jv@swwweb.net>

Subject: Answer to Jose V Gavila EC5AAN on R-390A questions

Message-ID: <32D66613.1B1E@swwweb.net>

Greetings to All,

While answering EC5AAN's questions about the R-390A from the last BA digest, it accrued to me that there may be others with similar

questions. I am posting my suggestions to him in that spirit.

Lon W. Cottingham wrote:

>

> Jose,

>

> Congratulations on obtaining a great old receiver. The "EAC" R-390A's
> are some of the best R-390A's made. They were the ones chosen for
> modification to the later R-725. I now understand that Motorola made a few
R-725's.

>

> Do not worry about paint on the knobs. Just about anything will give
> good results. I have tried all kinds of common spray paint through out
> the years. I like to bake them in my wife's oven for thirty minutes at
> 250 degrees. Another suggestion is to strip them clean and prime and
> paint with some of the new epoxy paint. I would use a 1/4 inch wooden
> dowle or a led pencil to hold them, like a lollipop pop and dip them
> into the paint and use the dowle to hold them upright (through a hole in
> a cardboard box) until dry.

>

> The set of tubes will come in handy. The rectifier and ballast tubes
> are the most difficult to find. There are, of course, several different
> ways to replace them with more modern and reliable devices. You should
> check "Electric Radio" for some of these mods.

>

> The COSMOS PTO is a controversial subject. Some say they are the best,
> some say the worst. My approach to the subject is that if your PTO
> tunes smoothly with no chirps or warble, don't worry about it. New,
> factory rebuilt PTO's are available from Fair Radio Sales.

>

> The crystal calibrator and the BFO have nothing to do with each other.
> They are independent devices. The crystal calibrator produces
> unmoderated RF and feeds it into the front end of the receiver. It is
> them converted down to the IF frequency of 455 Khz (RF not audio). The
> 'SSSSSSS' that you mention is inherent noise in the receiver. Notice
> that the "S" meter gives an upward indication when you tune the receiver
> across any the calibrator signals. If you want to hear something from
> it you must turn the BFO on. The BFO produces an unmoderated RF signal
> of plus and minus a few Khz of 455 Khz. The calibrator signal had been
> converted by the receiver to exactly 455 Khz (the IF frequency). These
> two signals beat (mix) together to produce the audio tone that you
> commonly hear. If you tune the BFO exactly to 455 Khz you will hear
> nothing because you have achieved a "ZERO BEAT" condition. Tuning the
> BFO either direction will produce an audio tone ranging form zero (zero
> beat) to what ever the limit of the circuit is. You always do this when
> you receive CW (also SSB, but in a slightly different way).

>
> My suggestion is to use the unbalanced antenna connector. The twinax
> connector was designed for shipboard balanced 200 ohm input. Most
> Amateur applications today use unbalanced 50 ohm input. The unbalanced
> connector is called a "C" connector. There are snap on adapters
> available to adapt form "C" to "N", "PL", or "BNC". I use the BNC as it
> is readily available and in common use. Until you acquire an adapter,
> simply connect the center of your coax to the center of the unbalanced
> input and connect the braid of the coax to the chassis with a clip lead.
>
> The 12 volt filament transformer that you plan to use to match the 600
> ohm audio output to your speaker is a good choice. It may not produce
> an exact match, but it will be close enough. You will get quite
> acceptable audio from the R-390A in this manor. Remember that you are
> not dealing with HI-FI quality audio here. The output is only about one
> half watt into a 600 ohm load and the distortion product is fairly high
> but acceptable. If you find that you want more and better audio, I
> would suggest that you try the Kleronomos audio mod that has been
> mentioned so much lately here on the Boat Anchors. This mod was
> originally published in "Electric Radio". A good speaker system and a
> proper match are essential for good communications and pleasant
> listening.
> --
>
> 73 de Lon, K5JV

From boatanchors@theporch.com Fri Jan 10 07:28:58 1997
From: "James F. Wood" <WOODJ@mail.firn.edu>
Subject: Books FS
Message-ID: <D925ZWQTBUKQH*/R=FIRNVX/R=A1/U=WOODJ/@MHS>

Applied Practical Radio Television course by Coyne(Chicago)
1953/55 7 vols total(two vols #3 one with a 53 date and other with a 55
date)Good condition.\$30.00 and I'll ship in US.
woodj@mail.firn.edu

From boatanchors@theporch.com Fri Jan 10 13:50:06 1997
From: "Bill Richarz" <wricharz@transprt.com>
Subject: Drake TR-4, AC-4, MS-4
Message-ID: <19970110131359.07f41733.in@transprt.com>

Picked up a real nice looking Drake TR-4, AC-4 PS and the Drake
MS-4 Speaker, complete with the owner's manual. Just blew off the
dust & it seems to work perfect with good output. I'd like to have
\$300 for this setup, plus the shipping. I will pack these in 3 boxes,

(removing the PS from the MS-4 speaker). Anyone interested can give me a call at 704-545-9368, or reply to my Email address.

73 de Bill, N4DH, ex WA4VAF

From boatanchors@theporch.com Fri Jan 10 07:28:58 1997
From: Tom.Daley@530.gigo.com (Tom Daley)
Subject: fs: more
Message-ID: <09d_9701091640@gigo.com>

hello ba people the following items are for sale or trade.
i am looking for gonsets ! (no two meter am please !)

1. drake r4a hf receiver in very good condition. chassis is bright and free of problems under dust. the front panel is in great shape complete with all knobs, meter, and dial very fb. some grime but no scratches. no mods ! case has some minor scratches but very good overall. works great !! loaded with extra crystals ! (mars) with original manual ! \$135

2. drake t4x hf transmitter in very good condition, just like above ! no mods ! complete ! w/manual copy. no power supply !! untested \$75

3. knight tr-108 2 meter am transceiver in good condition. front panel is in very good shape under dust ! no mods ! vfo or xtal xmit. with original microphone ! no ac cord but includes matching jones plug to wire your own. no manual. untested ! \$50

do not be shy with offers or trades located in sacramento 73 tom
--

: Fidonet: Tom Daley 1:203/530 .. speaking for only myself.
: Internet: Tom.Daley@530.gigo.com

From boatanchors@theporch.com Fri Jan 10 21:54:00 1997
From: Bob Marsh <bmarsh@hicom.net>
Subject: Heath Manuals Needed
Message-ID: <32D6A4A0.47E3@hicom.net>

Hi everyone,

I'm in need of manuals for the following pieces of Heathkit Test gear:

AG-10 Audio generator
IG-102 Signal generator

I'd prefer originals, but complete copies are acceptable. Email me with the details/price.

Tnx es 73 de Bob/KB2SGM

From boatanchors@theporch.com Fri Jan 10 21:54:00 1997
From: "Walter Fairclough" <wfairclo@netcom.ca>
Subject: Heathkit
Message-ID: <199701102118.QAA00824@tor-srs2.netcom.ca>

Need a power transformer and a manual or at least the schematic for a Heathkit DX-40 transmitter.

Trying to restore the little beast.

Thanks

Walter

Walter Fairclough
Manotick, Ontario
wfairclo@netcom.ca

From boatanchors@theporch.com Fri Jan 10 21:54:00 1997
From: Mike Toneri <toneri@ils.net>
Subject: Re: Heathkit
Message-ID: <199701110046.TAA18674@server1.ils.net>

At 03:21 PM 1/10/97 -0600, Walter Fairclough wrote:

>Need a power transformer and a manual or at least the schematic for a
>Heathkit DX-40 transmitter.

>

>Trying to restore the little beast.

>

>Thanks

>

>Walter

>

>Walter Fairclough
>Manotick, Ontario
>wfairclo@netcom.ca

>

Hi Walter. Peter Dahl Company in El Paso Texas makes a replacement power transformer for the DX40. I have an old catalog so the price is probably higher now. The price in 1992 was \$55 US plus shipping. You may want to consider building an outboard power supply from whatever you have around.

That's what I did a number of years ago.
73...Mike VE3FGU

Mike & Lynda Toneri E-mail: toneri@ils.net

From boatanchors@theporch.com Fri Jan 10 21:54:00 1997
From: WA6GYD@aol.com
Subject: heathkit stuff
Message-ID: <970110175025_1559629053@emout06.mail.aol.com>

I have 1ea DX60A, 1eaHG-10B VFO, 1ea HR-10 reciver with a HRA-10-1calibrator installed and an HM-15 VSWR bridge. With all original manuals. All in excelelnt cosmetic and operational condition. The reciver was factory aligned and works very well. Sold as a set \$200 for all U ship. Please call Don at 408-378-3275. I will not take or answer E-mail orders.

From boatanchors@theporch.com Fri Jan 10 13:50:06 1997
From: "Lon W. Cottingham" <k5jv@swwweb.net>
Subject: I GOOFED AGAIN
Message-ID: <32D6680D.4D53@swwweb.net>

Greetings again to All,

It looks like I goofed again. The same posting went out twice. Please accept my apologies. Eventually I will learn how to operate this software. Netscape sure is not as smooth to operate as MS's I.E.. I wish the two manufacturers would get together and come up with one program with the best features of the two.

73 de Lon, K5JV

From boatanchors@theporch.com Fri Jan 10 07:28:58 1997
From: Michael Crestohl <mc@shore.net>
Subject: Installing 200 cycle Collins crystal filter in 75S-3C!
Message-ID: <199701100732.CAA18167@northshore.shore.net>

Hello All Keepers of the Winged Emblems.....and Round ones too!!!

I received a Collins 200 cycle filter today and installed it. I observed a terrific insertion loss - can hardly hear the signal through the 200

cycle filter. I am aware that the 200 cycle filter is non-symmetrical and I plugged it in properly. I tried tweaking the two trimmers for FL3. I swapped the 500 cycle mechanical filter and tried the crystal filter in FL2 - the 500 cycle filter worked fb in FL3. The 200 cycle filter seems to be the correct one - X455KQ200 - although my manual for the 75S-3C manual (early, WE, no filter cover) shows the filter as X455Q200 - but I seriously doubt if this is the problem. Since I am hearing some signal and filtering activity I doubt if the filter itself is the problem. The things either work or they don't.

My off-the-cuff analysis says that a 455 KC I-F alignment might be the solution. Then I'd probably do a complete alignment. I've never used a receiver equipped with the 200 cycle filter and so don't know how much signal attenuation is to be expected. Anyone have any experience installing one of these? Any ideas or suggestions would be welcomed?

73,

Michael Crestohl, W1RC
mc@shore.net

From boatanchors@theporch.com Fri Jan 10 07:28:58 1997
From: k7yha@juno.com (Richard H. Arland)
Subject: KR-40 Keyer Schematic Needed
Message-ID: <19970110.121105.6727.0.k7yha@juno.com>

Gang:

Just got a T-T KR-40 keyer that is not working (that's why it was free!) and need a schematic for the micro-beastie. Will pay copying costs and postage.

73 es tn timer

rich K7SZ

From boatanchors@theporch.com Fri Jan 10 07:28:58 1997
From: Richard Hager <rhager@millcomm.com>
Subject: Re: Missed bargains
Message-ID: <32D58DB5.43D6@millcomm.com>

Wow.

Consider this member of the "snarling hyena-jackal pack" as being

thoroughly chastised, and more than a little dismayed.

Since my response to an ongoing thread seems to be the post being torn to pieces, I hereby apologize to the symposium for being part of the discussion. I'll sit down and be quiet now.

R.
--

Richard Hager

+ Ah-ha! Design Group, Inc. -
+ Precision CNC Technology, since 1991 -
+ 612-641-1797, Fax: 612-641-8681 -
+ "I just like to make things" So... -
+ ...please call Ah-ha! directly for CNC info -
+ <http://www.millcomm.com/~ahha> email: ahha@millcomm.com -

From boatanchors@theporch.com Fri Jan 10 13:50:06 1997
From: Ho4bart@aol.com
Subject: more re: "missed bargains"
Message-ID: <970110120453_1358912724@emout02.mail.aol.com>

this may be one of the best ideas i've gotten off
the b/a mail: when i advertise, i think i will now
add some line like: " & tell me why you'd like
to have this" this would spare having to
look at the milliseconds between reply postings,
and is a nonoffensive way of screening out the
wheelerdealers, portfolio developers, museum-
mausoleums, A-Z widget collectors, and conversion-
hackers. (biases unabashedly personal.)
last yr i sold some military items, not national
treasures but rare enuff . while i was carefully
describing the condx, the buyer interjected, "don't
worry....when i'm done with them they'll look completely
different" but.....the deal was already agreed on.
i regret that! it's not a fair transaction unless both
parties are happy. my radio buddies back in wa.
state & i joke about "placing our treasures in good homes"
when we're thinning out. in fact, greggus asks for visitation
rights! hue miller

From boatanchors@theporch.com Fri Jan 10 21:54:00 1997
From: Hans Jense <jense@eos.arc.nasa.gov>
Subject: Need info on BC-1421 VHF receiver

Message-ID: <199701101954.LAA03809@eos.arc.nasa.gov>

A couple of days ago UPS dropped off (but gently this time!) an interesting boatanchor on my doorstep. This is a VHF receiver, made for the US Air Force, covering the 100-150 MHz airband. I would very much like to find out more about this receiver. Below I have provided a brief description of it. Anyone who can tell me more, e.g., timeframe it was developed/used, purpose, etc., please respond. Also, if someone can supply the TM number of the manual (or better yet: the manual itself) please drop me a line.

Here goes:

Unit is in a standard 19" rack mount case, about 10" high.

Name tag says: United States Air Force
Radio Receiver BC-1421
Serial No. A-9, Order No. W33-038-ac-18028
Hazeltine Electronics Corp.

Frequency Coverage is 100-155 MHz

Tube complement: 9003 RF Amp.
9003 Mixer
9002 Oscillator
9002 Osc. Doubler
6SG7 IF Amp. (3)
6SQ7 Det./AVC
6SG7 BFO
6H6 Noise Limiter
6K6GT Audio Out

Front panel lay-out:

Left side: Frequency Scale + Large tuning knob below it
Right side, Top row: Tuning meter
Middle row: Attenuation switch (-12dB, -6dB, 0dB)
CW Tone Control
Monitor Out and Line Out jacks
Bottom row: Threshold sensitivity (preset)
RF Gain
"Mode" selector (CW and Manual, Manual, AVC)
Audio Gain

The Monitor and Line Out jacks are 600 Ohm and 8 Ohm respectively.

On the rear panel are an N-connector for the antenna input, and a 7 pin Amphenol plug for connecting the power supply (for which I fortunately

have the matching plug!). The two audio outputs are also available on this 7-pin connector.

I really hope someone comes up with additional information on this unit. Thanks in advance for your efforts.

-- Hans

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=====
Dr. G. J. Jense          | Command & Control and Simulation Division
Senior Scientist         | TNO Physics and Electronics Laboratory
Virtual Environments     | The Hague, The Netherlands
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Currently on leave at:



Human and Systems Technology Branch
NASA Ames Research Center
Code AFH, Mail Stop 262-2
Moffett Field, CA 94035-1000

Phone: (415) 604-1877
Fax: (415) 604-3729
Email: jense@eos.arc.nasa.gov

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From boatanchors@theporch.com Fri Jan 10 21:54:00 1997
From: Ken_Warren@beavton.k12.or.us (Ken Warren)
Subject: Re: Need info on BC-1421 VHF receiver
Message-ID: <2025058205.5513223@beavton.k12.or.us>

I have some data on this system at home. It is a modified BC-639 receiver, not sure just what the changes were but they are minor. It was used in the late 40's thru the 60's for air to ground communications with the BC-640 (i think) transmitter.

Not real sensitive but ok seems like around 5 or 6 microvolts. I used one of these with an SCR-522 transmitter for my first VHF rig back in the 60's. I don't think I have a schematic for it but a BC-639 schematic will be very close. Be very careful about moving things in the tuner assy, parts placement is pretty critical.

Ken Warren K7RPX

Ken_Warren@beavton.k12.or.us

KenwK7RPX@worldnet.att.net

--

Beaverton School District
Beaverton, Oregon

From boatanchors@theporch.com Fri Jan 10 13:50:06 1997
From: "Nagle, Timothy E" <Tim.Nagle@UNISYS.com>
Subject: Need: RS-6 Plastic cards
Message-ID: <c=US%a=_ATTMAIL%p=UNISYS%l=RV_EXCHANGE_3-970110155400Z-1271@tr-exchange-2.tr.unisys.com>

Hello All,

I have an RS-6 that didn't come with the plastic cards. Does anyone have a set of cards they could either loan or xerox for me? I would like to make some reproductions for myself and others who need them. If you are able to help, let me know.

Thanks,

Tim
timothy.nagle@unisys.com
(612) 881-4648 (home)
(612) 687-2940 (work)

From boatanchors@theporch.com Fri Jan 10 21:54:00 1997
From: "Allan Fritsche" <fritsche@msn.com>
Subject: New BA book
Message-ID: <UPMAIL03.199701102350530062@msn.com>

Gang, ordered about two nights ago this 1997 edition of "SHORTWAVE RECEIVERS PAST AND PRESENT".
Now I haven't received the book yet, Larry Wolken thinks it's the greatest thing since (you guess).
If it compares to the Halli Dachis Book) I will be more then happy.
Anybody else order already? or should I make a report when I get my copy.
At any rate I will make a report as no one on the list has even talked about it since the first list message.
Your Friend Al
fritsche@msn.com

From boatanchors@theporch.com Fri Jan 10 21:54:00 1997

From: Hans Jense <jense@eos.arc.nasa.gov>

Subject: Re: New BA book

Message-ID: <1997011110020.QAA12315@eos.arc.nasa.gov>

> Gang, ordered about two nights ago this 1997 edition of
> "SHORTWAVE RECEIVERS PAST AND PRESENT".
> Now I haven't received the book yet, Larry Wolken thinks it's the greatest
> thing since (you guess).
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> Anybody else order already? or should I make a report when I get my copy.
> At any rate I will make a report as no one on the list has even talked about
> it since the first list message.
> Your Friend Al
> fritsche@msn.com
>

Yesterday I also ordered my copy after reading Larry's rave review. If
my impression turns out significantly different from Larry's and/or Al's
I'll also post my remarks to the list.

-- Hans

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=====
Dr. G. J. Jense      | Command & Control and Simulation Division
Senior Scientist     | TNO Physics and Electronics Laboratory
Virtual Environments | The Hague, The Netherlands
=====
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Currently on leave at:

WAVE

Human and Systems Technology Branch
NASA Ames Research Center
Code AFH, Mail Stop 262-2
Moffett Field, CA 94035-1000

Phone: (415) 604-1877
Fax: (415) 604-3729
Email: jense@eos.arc.nasa.gov

From boatanchors@theporch.com Fri Jan 10 21:54:00 1997

From: kilgore@dev.tivoli.com (Jeff Kilgore)

Subject: Re: New BA book

Message-ID: <199701110045.SAA01593@wichita.tivoli.com>

I ordered my copy of "SHORTWAVE RECEIVERS PAST AND PRESENT" this morning. I'm looking forward to getting a look at it, and will let everyone know what I think (IMHO, of course).

73,
Jeff

From boatanchors@theporch.com Fri Jan 10 21:54:00 1997
From: Robert Fowle <hammarlund@jacksonmi.com>
Subject: NOTE: HAMMARLUND MANUAL PRICE DECREASE
Message-ID: <32D6DF17.6EC4@jacksonmi.com>

YES, I lowered the price of 'most'
manuals listed....have a look see...

<http://www.jacksonmi.com/hammarlund/hamrmanu.html>

--

**** Visit my Web Page.....****

=====]-[->

Robert Fowle KC8DBC
1215 Winifred
Jackson, Mich. 49202-1946
Ph. 517-789-6721
E-mail: hammarlund@jacksonmi.com
Web Page: <http://www.jacksonmi.com/hammarlund>

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Moderator: Robert Fowle
at: <http://www.inetnc.com/hamchat/>

From boatanchors@theporch.com Fri Jan 10 07:28:58 1997
From: "Grant Youngman" <nq5t@gte.net>
Subject: P&B 10K ohm DPDT relay ??
Message-ID: <199701100005.SAA10415@smtp.gte.net>

Gang ..

Anyone know where I might go looking for a DPDT relay with a 10K ohm coil -- such as a Potter&Brumfield LM11?

If this sounds at all familiar, it is the relay used for PTT in the Ranger ...

Regards .. Grant

Grant Youngman / NQ5T

nq5t@gte.net
<http://home1.gte.net/nq5t/index.htm>
Double Oak, TX -- nr Dallas

From boatanchors@theporch.com Fri Jan 10 13:50:06 1997
From: "James F. Wood" <WOODJ@mail.firn.edu>
Subject: Pearce-Simpson help needed
Message-ID: <D954ZWQTH6Z16*/R=FIRNVX/R=A1/U=WOODJ/@MHS>

I purchased a Pearce Simpson marine radio at a ref flea market for \$5.00 .
It is a Bimini 550 covering the 2-3 khz range with 8 crystals(I think)
It has the following tubes 12JB6A, 12AQ5, and 12AD6.Anyone know anything
about this radio, any manuals ietc available? Any suggestions what I could
use it for.(HeY i buy also anything for #5.00)
Thanks
jim
woodj@mail.firn.edu

From boatanchors@theporch.com Fri Jan 10 13:50:06 1997
From: Jacqueline Herman <jherman@sierra.net>
Subject: Re: Pearce-Simpson help needed
Message-ID: <Pine.SUN.3.91.970110112904.13835A-1000000@diamond.sierra.net>

Hi Jim,
Before the days of the VHF FM marine band (up around 156 Mc) there was
the 2-3 Mc AM marine band (used for short to medium range comms with
shore stations and other boats). That band went to SSB in the mid-70s
and it's still in use - the Coast Guard still monitors 2182 kc; hence,
thousands of those old AM sets found their way into dumpsters (which was
a real shame since they're easy to convert to 160m).

The rcvrs were usually SS, and xmtrs tubed.

Let me know if you ever want to sell it...

73,
Jeff KH2PZ / 7 (ex Coastie at NMO)

From boatanchors@theporch.com Fri Jan 10 21:54:00 1997
From: "William C. Robbins" <billrobb@net-link.net>
Subject: Plus Shipping
Message-ID: <199701110056.TAA16441@serv01.net-link.net>

Happy New Year Everyone:

I have a real problem. I have just consumated a deal with a list member for the purchase of boatanchors. The deal was \$200 PLUS SHIPPING.

The person that I am dealing with is a very trustworthy and highly respected ham. He was kind enough to ship the goods upon receipt of my personal check with the understanding that I would remit later for shipping. I have no misgivings about motives on his part.

The actual shipping costs (UPS) for the items was about \$20. The charges to me are \$70. It seems that the seller took the items to a professional shipper who provided boxes, packing and a mark-up on UPS fees.

I was very surprised to see this happen.

I may be one of few, but I save boxes, bubble wrap and foam peanuts to ship my items to others. If I quote 'plus shipping' I only expect the buyer to pay the actual carrier fees. If I were to ever run into a situation where I felt it necessary to do otherwise I think I would let the buyer know. Not only because I feel he should be considered, but also because I would be afraid that he would not pay me.

Anyway, what practices are common out there? Maybe I am way out of line and should just shut my mouth and pay.

Bill

From boatanchors@theporch.com Fri Jan 10 21:54:00 1997
From: jmlowman@ix.netcom.com
Subject: Re: Plus Shipping
Message-ID: <1997110173146641@ix.netcom.com>

On 01/10/97 18:54:54 you wrote:

>The actual shipping costs (UPS) for the items was about \$20. The charges to

>me are \$70. It seems that the seller took the items to a professional
>shipper who provided boxes, packing and a mark-up on UPS fees.
>
>I was very surprised to see this happen.
>
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>my items to others. If I quote 'plus shipping' I only expect the buyer to
>pay the actual carrier fees. If I were to ever run into a situation where I
>felt it necessary to do otherwise I think I would let the buyer know. Not
>only because I feel he should be considered, but also because I would be
>afraid that he would not pay me.
>
>Anyway, what practices are common out there? Maybe I am way out of line and
>should just shut my mouth and pay.

These high markups seem to be common among the professional packers/shippers. I shipped an HT, nothing else, to a ham in the Chicago area from here in SoCal, and it was something like \$20 total.

In this case, though, I had agreed to a price that included shipping. It was my choice to take it to be packed professionally, because I don't ship things very often, don't keep boxes/packing materials/etc, and don't have the time to mess with packing things myself.

This sounds like the old shipping/handling scam that a lot of mailorder outfits get us with. You know, \$4.95 shipping and handling, and the actual shipping charge is under \$2.00. But, \$50 handling seems exorbitant!

Since you value this fellow's integrity, you may just have to chalk it up as a lesson learned. However, I would have to say that he didn't use very good judgment in paying this outrageous amount, then expecting reimbursement from you.

73 de Jim - KF6CR

From boatanchors@theporch.com Fri Jan 10 21:54:00 1997
From: pmills@A.crl.com (Phil Mills)
Subject: Re: Plus Shipping
Message-ID: <199701110130.AA09023@A.crl.com>

Bill,

This is my personal opinion having been a buyer and a seller and doing a lot of packing and shipping. First, bite the

bullet and pay the charges that the seller has paid...assuming he has verified to you his actual costs. Next time, get a shipping charge quote before you buy something. I've shipped a fair amount of stuff that cost me more than I charged the buyer but that was my fault and not the seller's. Again, ask for a shipping price quote. The reason I say this is that your seller was obviously inexperienced and took the item to a "pack and ship" place in the local strip mall. These places are really a rip off but are designed for people who ship only a few and small or light items.

Living in a major metropolitan area, I hesitate to make general statements. BUT, I shipped a 75A4 receiver and had UPS foam pack it for \$22 for packing with shipping charges additional...I selected the LARGEST box that UPS offered. I was able to rest assured that UPS "owned" it since I declared full value....they packed it, they carried it, they owned the whole thing in the event of damage.

You've been to HKU....Hard Knock University....I've been there and done that and now know enough to ask the right questions.

73, Phil

BTW, I do my own packing except in unusual cases (75A4's or whatever), I buy new heavy duty boxes if I don't have anything on hand that is appropriate and in good condition, and I pack with a full supply of bubble wrap or foam pellets, double boxing as needed, wrapped with filament tape as appropriate. UPS is the original 800 pound gorilla and I consider it to be the seller/shipper's responsibility to get the item safely to the buyer.

>The actual shipping costs (UPS) for the items was about \$20. The charges to
>me are \$70. It seems that the seller took the items to a professional
>shipper who provided boxes, packing and a mark-up on UPS fees.

>

>I was very surprised to see this happen.

>

>

Phil Mills, AB5TH ***** *****
pmills@a.crl.com
281-992-5762 days
Friendswood, TX (south of Houston)

From boatanchors@theporch.com Fri Jan 10 21:54:00 1997
From: Ronnie Hull <larebel@ms1.nwla.com>
Subject: plus shipping

Message-ID: <1.5.4.16.19970110193827.18bfead0@ms1.nwla.com>

Howdy ya'll

I don't usually respond to the "whole list" but this time I feel I should be heard. Some few months back, I shipped an SX-88 to a ham in California, from my QTH in Louisiana. I packed it well, I thought. Ups totally destroyed this fine radio. I wish like hell I would have paid \$70 to have it professionally packed. \$70 is cheap insurance on an item that means a lot to someone.

I do, however, agree that this individual should have let the other fellow know that this is what he was going to do. Big Bucks surprises are no fun to anyone. But still... It was better than having it arrive in peices, then both individuals would have been at a loss.

Ronnie - W5SUM

From boatanchors@theporch.com Fri Jan 10 07:28:58 1997
From: vancleef@netcom.com (Henry van Cleef)
Subject: Re: Purism and fuseholders
Message-ID: <199701100618.XAA04636@netcom17.netcom.com>

I've read the large quantity of responses to my proposal to install a fuseholder and 3-wire power cord on a clean RME VHF-152.

I'll note that if this unit were the usual electronic junk that I deal with there wouldn't be much question. Unfortunately, it is mechanically clean as a whistle.

My approach to questions like this is to answer "what would I do if I were working for the manufacturer and assigned the task of doing the engineering changes to bring the design up to 1960 and later standards?

This box will get used alongside my RME-45, which is a totally non-standard and highly modified unit, although mechanically it looks "unmodified." This set was a parts unit with a bad power transformer, so I did not quibble with "originality" when adapting a higher voltage transformer. The fact that it is modified is only obvious to someone very familiar with the original mechanical design of the 45---there are two extra phenolic terminal strips soldered to the chassis (as RME did it) and the wiring harness was reworked to move several of the

breakouts to different places. The radio is "blue collar electronics" with a 3-wire cord, an in-line fuse, and an AC filter mounted where the power resistor used to be (I eliminated that resistor).

Many of the responses talked about using a fused plug or adding a widget box. There was also some talk of either "keeping" the original power cord or installing a new match-the-original 2-wire cord, either polarized or unpolarized. This will not meet the basic objective of giving the unit a permanent safety ground integral to the unit. I have no particular love for fused plugs. A nice Belden 3-wire cord set with molded plug is what I would pick for either redesign or field retromodification kits, and that's what it will get. So far as the "original" cord goes, that had been clipped off. And anyway, the original was a Belden 2-wire zip cord with molded plug.

The fuse will go inside the set. I have not decided whether to use an in-line fuse and a terminal board or a clip-type fuseholder. The clip-type fuseholder has exposed terminals and clearance problems if mounted on existing hardware, and it appears the best choice is to mount it under the chassis with 6-32 hardware as intended. This will require a new hold for the screw, and use of a matching (pan head) screw, lockwasher, and nut. In short, "looks like RME made it that way," as with the 45 mods. Gluing the thing with RTV or anything else won't pass muster. The contacts are open, and if the bond breaks, sparks and fire..... Location is determined by the existing switch feed wire in the harness.

One other issue is the ground wiring in the antenna circuit. Standard setup for 2-wire setups was to connect the ground terminal to the chassis. With the chassis grounded through the power cord, it is appropriate to lift this connection and install a .01 capacitor, to block DC ground while allowing RF AC ground. On this box, the antenna ground is physically mounted on the chassis, so it can't be lifted.

The output wire, which goes to the receiver antenna terminals, will get its ground shield lifted from the chassis, and a .01 blocking cap.

I've done some ohmmeter inspection of this unit. It's got serious problems. It uses six 1000 pf. postage stamp micas. All of them show serious leakage, so will have to be replaced. I'm rapidly coming to the conclusion that serious HF RF doesn't mix well with these caps. The lowest resistances were on the caps that did RF coupling while (supposedly) blocking DC. The bypasses are not as bad, but leakage is up there with old paper cap leakage. I also found that the resistor in a voltage divider for the 6AK5 mixer screen that ran to ground was wide open, which would have put the screen around 145 volts instead of 110, and have concluded that the 3.9K resistor from B+ to the 6AK5 cathode was a "repair" intended to get the 6AK5 mixing again.

It is also obvious that RME had problems with the local oscillator on 2 meters. I have four schematics for VHF-152A, which use the same oscillator circuit, with two configurations, and the as-wired configuration makes a third. The oscillator tube is one triode of a 6J6. I suspect that the oscillator would work more reliably if a 6C4 were used (not available in 1945). There are also some TV triodes used in the 50's and 60's, which will operate at over 250 Mhz. without trouble. The oscillator circuit is unusual in that it is a capacitive feedback tuned-grid circuit, and doesn't use a "tickler" coil for feedback. I expect troubles here, and that my Boonton RX bridge will get to earn its keep again getting the oscillator to work reliably on 2 meters.

--

=====
Hank van Cleef
E-mail vancleef@netcom.com or vancleef@tmn.com
=====

From boatanchors@theporch.com Fri Jan 10 13:50:06 1997
From: 4CX250B@miavx1.acs.muohio.edu
Subject: Re: Purism and fuseholders
Message-ID: <v03007801aefc3e01504c@[134.53.5.143]>

>

>Hank Van Cleef writes:

>

>One other issue is the ground wiring in the antenna circuit. Standard
>setup for 2-wire setups was to connect the ground terminal to the
>chassis. With the chassis grounded through the power cord, it is
>appropriate to lift this connection and install a .01 capacitor, to
>block DC ground while allowing RF AC ground. On this box, the antenna
>ground is physically mounted on the chassis, so it can't be lifted.

>

>The output wire, which goes to the receiver antenna terminals, will
>get its ground shield lifted from the chassis, and a .01 blocking cap.

>

>

I agreed with everything else in Hank's posting (as I usually do with what Hank writes), but I'm afraid I'm confused by the above comment. It wouldn't hurt to isolate one of the antenna inputs from d.c. ground by using a .01uF cap, but I don't see why it is desirable. Obviously, for "single-ended" (coaxial) antenna inputs it isn't desirable or practical, but why is the reasoning different for differential (balanced) input antenna inputs. In most 2-wire receivers I've worked with, there is a

removable strap which ties one of the balanced antenna input connections to ground. This arrangement allows a true balanced antenna (e.g., a 300 ohm folded dipole) to be completely isolated from ground, or an unbalanced antenna to be used with the strap connected. Why should this strap be replaced with a .01uF cap to provide d.c. isolation?

Jim W8ZR

From boatanchors@theporch.com Fri Jan 10 13:50:06 1997
From: vancleef@netcom.com (Henry van Cleef)
Subject: Re: Q: Determining the tuning range of a rcvr.
Message-ID: <199701101848.LAA00699@netcom5.netcom.com>

As D. Ragsdale discourses

>
> I've got a mid -20's battery set made by Tuska. These old radios don't have
> a direct reading tuning dial, but rather have dials calibrated in 0-100
> scales.
>
> Is there a relatively straightforward way to evaluate what the tuning range
> of a receiver might be, perhaps just from an evaluation of the tuned
> circuits in it (e.g. using a grid dip meter on the LC circuits)?
>

Yes, a grid dip on the first (nearest antenna) tuned circuit will give the tuning range of the set---approximately. With the tubes out of the circuit, and not operating, there will be some shift, but it should not be significant.

Alternative methods would be to use a Boonton RX bridge or find a way to hook up a Q-meter and measure the coils and tuning caps.

The set is most likely a straight TRF or regenerative TRF, not a superhet, so all three stages would tune the same. If sold for home entertainment, it is likely to cover 600-1200 Khz., maybe a little more. Very early broadcast used only a couple of frequencies---I've forgotten the numbers, but it was about 800 Khz. The band was extended to 1600 Khz in the late twenties, to 1600 in the thirties, and recently to 1700. I would doubt that the radio would tune anywhere near 160 meters.

--

=====
Hank van Cleef

E-mail vancleef@netcom.com or vancleef@tmn.com

=====

From boatanchors@theporch.com Fri Jan 10 07:28:58 1997
From: John Kolb <jlkolb@cts.com>
Subject: Re: R-390A meters
Message-ID: <Pine.SCO.3.91.970109204401.22236B-1000000@sd.cts.com>

On Thu, 9 Jan 1997, R. Lamb wrote:

>
> As for the Line Level meter. There could be a resistor in series with the
> movement innside the case. I' check it out es let you know...
>

The R-390A schematic shows the Line Level meter as being across the Line Audio output, so it's an AC responding VU meter, rather than a DC mA or uA meter.

The VU meter is fed from a resistive divider circuit to switch it to different sensitivities, so the characteristics of a replacement meter probably have to match the original to some degree, unlike the usual VU meter straight across a 600 ohm audio line, in which case the meter characteristics do not mater much. I doubt that the DC measurements relate very closely to the characteristics that do matter. I would assume a DC meter movement with bridge rectifier circuit, and probably a small cap inside the case . The diode characteristics, silicon or germanium prrobably make the most difference, and the size of the cap would affect the overshoot and damping.

John

From boatanchors@theporch.com Fri Jan 10 13:50:06 1997
From: wb7vdm@ro.com (R. Lamb)
Subject: Re: R-390A meters
Message-ID: <199701101828.MAA06426@sh1.ro.com>

>On Thu, 9 Jan 1997, R. Lamb wrote:
>
>>
>> As for the Line Level meter. There could be a resistor in series with the
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>that the DC measurements relate very closely to the characteristics
>that do matter. I would assume a DC meter movement with bridge rectifier
>circuit, and probably a small cap inside the case. The diode
>characteristics, silicon or germanium probably make the most difference,
>and the size of the cap would affect the overshoot and damping.
>
>
>John
>
>
You're Right! I put a potential across my meter and set it to full scale.
Then I reversed the polarity of the potential and the meter still went to
full scale.

Seems to be a bridge rectifier inside it.

Ron Lamb		Timothy Twerp was most astounded.
WB7VDN		When what he thought was, wasn't grounded.
wb7vdm@ro.com		In fact, one could say he was most transfixed.
Huntsville, AL.		With his thumb on pin 3 of a live 6L6!

From boatanchors@theporch.com Fri Jan 10 07:28:58 1997
From: eb5agv@ctv.es
Subject: R-390A questions
Message-ID: <1.5.4.16.19970110132026.227f426c@192.168.0.1>

Hi BA folks!

I've just got (yesterday, 9-Jan-97) a nice R-390A from a list member. It is
an EAC, S/N about 1500 (I don't have it near now...). By the way, it is in

very good cosmetic condition except the small knobs painting, which is in very bad shape (although the seller sent me lot of spares, but they arrived peeled off, with the painting scratched). So, first question is: which kind of painting is good for the knobs?. I have thought using car spray painting.

FYI, I've got with the receiver a WHOLE tube set (with 27 tubes, so there are three extra!), and it includes of course the two 26Z5 and one 3TF7, which I think are not too common... ;-)

About electrical condition, I had no time to check it yet at full, although I changed it to 230 VAC operation and could see a very clean interior and original parts here and there. PTO is a Cosmos one (I've read something about it, but long time ago... Can anyone refresh my memory?). But some other questions arise:

One question is the calibrator; is it supposed to work with BFO in OFF position?. In that position, the tone is not heard, only a 'ssssssss' sound; but with BFO ON, I've clearly heard the tone. Any idea?.

As I told in another message, I've just got also some TWINAX connectors and I plan to hook there the antenna. I have only coax wires from my antennas but I've learned somewhere that it is not a good idea to put the antenna in the unbalanced connector, so I plan to put it in the balanced one, with one wire to ground. Am I right?. Do I need a balun?.

Another interesting matter, the audio output!. As I have not a 600 to 8 ohm trnasformer, I've attached a 125 to 12 volts transformer, which I've read is a good substitute. By the way, sound is not bad, but I wonder if it is a good substitution.

Well, more questions to follow, sure!. Thanks for your help!.

Best regards.

73 JOSE V. GAVILA (EB5AGV / EC5AAU)
46910 Benetusser - Valencia
SPAIN

QTH locator: IM99TK

*** PLEASE, VISIT MY HOME PAGE AT : ***
http : [//www.geocities.com/SiliconValley/6992](http://www.geocities.com/SiliconValley/6992)
e-mail: eb5agv@ctv.es & eb5agv@amsat.org

From boatanchors@theporch.com Fri Jan 10 07:28:58 1997
From: "Pentti Haka" <pha@mikrolog.fi>
Subject: R390A line level meter
Message-ID: <MAILQUEUE-101.970110102244.288@osku.mikrolog.fi>

Henry van Cleef wrote:

	LINE LEVEL METER	CARRIER LEVEL METER
	-----	-----
>> Full scale	200 uA	1 mA
>> Impedance	11.9k ohms	20 ohms
>>		
>>		

>The numbers for the 200 microamp look a bit high to me. These
>generally run 1000-2000 ohms. At 12K, the wire would have to be
>measured in angstroms.

Looking at the schematics it seems that the line level meter is an AC meter (VU meter), i.e. contains a built-in rectifier and is therefore non-linear. This would explain the high resistance. This could be checked using a higher voltage for the measurement, which should give a lower resistance value.

----- Pentti Haka -----
----- OH2TC -----
-- Pentti.Haka@Mikrolog.fi --

From boatanchors@theporch.com Fri Jan 10 21:54:00 1997
From: Ornitz_Barry <ornitz@eastman.com>
Subject: Receiver Protection - Rebuttal (long)
Message-ID: <1997011110107.AA17059@eastman.com>

As an introduction to the following message, please allow this old curmudgeon to apologize in advance for the excessively irascible tone. Not only do I have the flu, my creaky old spondylitis is hurting with the snow storm due to hit later this evening. On top of this, I have having to post this in a rather circuitous manner because some people on the BA list cannot send mail to me without using their mailreader's "reply" command - these folks being too lazy to look at my signature. In every message I send, I include an address that ALWAYS works:
<ornitz@eastman.com>.

The original topic was "Receiver Protection Circuits". This is certainly a little vague so let's begin by breaking this into categories.

- 1.) Power line transients, surges, etc.
- 2.) Static electricity at the antenna input.
- 3.) Lightning protection at the antenna input.
- 4.) Inadequate isolation of transmit/receive relays.
- 5.) Overload from nearby transmitters.

Category 1 has been discussed many times by this group. Inrush current limiters are inexpensive and they work well. They do generate heat and they require some care in their selection and use. Metal oxide varistor (MOV) transient voltage limiters are also inexpensive and they work well. A staged approach is useful with these. At the electrical service entrance to your home, you should have a combination surge/lightning protector. Optionally you may have a surge protected multiple outlet strip. Finally you should install an individual MOV in the receiver. Pick the voltage rating by the expected line voltage; on the surge current rating, oversizing will not hurt anything but your checkbook. Finally EVERY receiver should have an internal fuse or circuit breaker. My personal feelings are that I don't give a damn about authenticity if the original designer was too stupid or cheap to use a fuse. I likewise always use a grounded three-wire cord where possible.

Category 2 is simple. Just make sure the antenna input is grounded for DC. This may mean adding an RF choke across the input terminal if the input coil does not provide DC continuity to ground.

Category 3 is extremely complex in that protection against a direct hit is impractical. Protection from induced currents caused by nearby lightning strikes is quite practical and the techniques for category 5 are very similar. It should be noted that transient receiver overload and intermodulation distortion DURING the lightning strike IS expected.

Category 4 was, I believe, what Roberta Barmore initially asked about. Quality T/R relays have very good isolation. In fact, at HF and using vacuum tube equipment, ordinary relays often perform quite adequately. It is important that internal leads within the relay be short and that the relay insulation be good at radio frequencies. For better receiver protection, it is sometimes useful to ground the receiver input during transmit (or even better, terminate it in its characteristic impedance).

Category 5 is the interesting one. This situation occurs when you are doing full break-in CW with separate antennas, when you are operating Field Day in a multi-transmitter category, when you live near a broadcast station, or when you desire to listen on alternate frequencies on additional receivers while maintaining a QSO with another receiver and transmitter. This situation is the one where the probability of damage to the receiver front-end is most likely (expect lightning, of course). This is also the category I believe most of us have been discussing in the last

few days. Protective circuitry for category 5 is what I plan to discuss here today.

Protection against DAMAGE to a receiver's front-end only requires that you limit the amount of RF getting to the receiver. Vacuum tube receivers, with their typical tuned-circuit front-ends are quite resistant to moderately high levels of RF. Unless you are using a 416 frame-grid planar triode or some of the more delicate Nuvistors, driving the grid into momentary positive conduction is not going to do much damage. Solid state receivers, on the other hand, can be damaged by much lower power levels going into the receiver. Ultra-low noise GaAsFET amplifiers used in microwave work are especially sensitive to burn-out, but remember this group does not worry about these "new-fangled" devices. The power needed to burn out a receiver input coil is likely on the order of several WATTS. With reasonable antenna separation at a Field Day site, and some attention to details, receiver burn-out from RF of another nearby transmitter is uncommon. Likewise, even with full CW break-in using separate antennas, it is not that difficult to prevent receiver damage.

Preventing receiver QRM and intermodulation products from nearby strong RF sources is an entirely different issue. This is an extremely difficult problem with no simple or completely effective answers.

Carl, KM1H, made, what I believe is a totally unfounded statement:

> I feel that Barry and a few others have missed the point about IMD
> generation in a diode and are instead concentrating on the simple model
> text book characteristics.

Actually I think Carl has totally mixed apples with oranges by confusing IMD generated by SWITCHING diodes from that of shunting PROTECTION diodes. The models I have used are textbook but certainly not simple or linear. They describe real device behavior pretty darn well. Allow me to hit a few points in detail. [And Carl, please do not take this as a personal flame. Go back and read your articles again and you might understand more of what I am talking about.]

> It is this combined energy (read power as in watts) that is additive (up
> to the point it becomes pure noise) and is also constantly creating
> mixing products. The math to explain this can be very very extensive.
> This additive power is the very reason that the CATV pole mounted
> amplifiers and line extenders have gone to such extremes to assure
> linearity.

It is not the additive power, but the fact that at certain points in time, the various waveforms will combine IN-PHASE to produce an excessively high input voltage. The amplifiers operate in such a way as to amplify their input voltage or current. Power is amplified as a consequence of the real

part of the impedance upon which this voltage or current operates. The CATV amplifiers need an extremely wide dynamic range because of the high value of peak to average power. [A similar situation occurs with the output of a SSB transmitter with a square-wave modulating waveform. The PEP to average power ratio is theoretically infinite.]

All nonlinear devices produce intermodulation and harmonic distortion. The math is not really complex at all if you are familiar with Taylor and Fourier series. I know the typical reader on this list HATES math but bear with me a minute...

Let us assume an arbitrary nonlinear device is placed anywhere after the antenna input. We can then attach several signal sources to the input. To describe our nonlinearity, we can express its output as a power series of its input with a polynomial expansion:

$$y(x) = A_0 + A_1x + A_2x^2 + A_3x^3 + A_4x^4 + A_5x^5 + \dots$$

How many terms are needed are dependent on how nonlinear the device is. With vacuum tube devices, it is rarely necessary to include more than 6 terms. Field effect transistors need around 3 terms and semiconductor diodes and transistors, because of their exponential voltage/current relationship, require a large number of terms.

Now by much manipulation and hand-waving, it can be shown that all the A_0 term represents is merely a DC offset. The A_1 term represents the effective linear gain of the device. This might be the transconductance of a tube, or the Beta of a transistor. It is the higher order terms that get interesting.

If you feed a single signal into the device, the A_2 term will be associated with the strength of a new second harmonic signal on the output. Likewise with a single input frequency, the higher order terms are associated with their matching harmonics.

What gets really interesting is when you have two input signals of slightly different frequencies. In this case, you get not only the original signals and their harmonics, but a whole new set of signals on the output called intermodulation products.

Again with some hand-waving you can show that all even-order terms in the series are connected with the generation of harmonics. Since the harmonics are well away from the original frequencies, they are called out-of-band signals.

The odd-order terms, however, create entirely new frequencies, close to the original frequencies, called in-band intermodulation products. For example with two input frequencies, F_1 and F_2 , and a fifth order

polynomial you would see all of the following "in-band" signals.

F1	F2
2F1 - F2	2F2 - F1
3F1 - 2F2	3F2 - 2F1

You would also see a number of "out of band" signals such as: 2F1, 2F2, F1 + F2, 2F1 + F2, 3F1, 2F2 + 2F2, etc.

Fortunately, with most devices the nonlinearity is such that the higher order polynomial terms become smaller as their order increases. This means that the harmonics and intermodulation products decrease in amplitude from the fundamentals. In general, intermodulation products are found symmetrically about the fundamentals in the frequency domain.

> The severity or potential of IMD can be reduced by using a preselector
> before the diodes. If a user is simply attempting to keep Tx RF out of
> the Rx the diodes will do the job up to a point before they go bang.

The advantage of a preselector, or tuned front-end as found in most Boatanchor receiver immediately becomes obvious. If you can keep strong signals, well away from the desired frequency, from ever getting into the receiver, the problems of nonlinearity are lessened. But the problem with in-band signals still remains. To what degree these are a problem is dependent on the nonlinearity.

Carl then went off the deep end:

> I made a mistake in a previous posting when I mentioned Schottky diodes.
> I meant to say Hot Carrier which requires the added complexity of bias.
> In ascending order from bad to better the diode choices are point
> contact (germanium); hot carrier; silicon; PIN's. The 1N5179 is an
> excellent PIN right down into the BC band. PIN's require a DC return
> path which can simply be an RF choke.

To begin with, almost nothing is correct here.

Schottky diodes ARE hot carrier diodes. They are also known as MES diodes because they are MEtal Semiconductor diodes. The original point-contact microwave diodes, called crystal diodes, are really Schottky diodes. Germanium diodes can be made in either the point contact variety (the earliest ones) or in bonded form (the later ones). The so-called turn-on voltage is lowest for Schottky diodes. This is why they are used to protect sensitive-gate GaAs MOSFETs in UHF/microwave preamps but it is also why they generate intermodulation at low input signal levels. The PIN diode utilizes an entirely different construction from conventional semiconductor diodes. In a Schottky or MES diode, a rectifying metal contact is attached directly to a doped semiconductor. In bonded

germanium or silicon diodes, a p-type semiconductor is adjacent to an n-type semiconductor. In a PIN diode, however, the construction is slightly different. A p-type doped semiconductor is on one side of the diode and an n-type doped layer is on the other side. Between them is an un-doped intrinsic semiconductor, hence the P-I(Intrinsic)-N diode. This special intrinsic layer gives the PIN diode an unusual characteristic called a long carrier lifetime.

Since this is the Boatanchors list and extensive discussions on semiconductors is forbidden, I won't go into details here, but the PIN diode behaves as a low-value resistor when forward biased and essentially an open circuit with a small shunt capacitance when unbiased or reverse biased... FOR FREQUENCIES ABOVE $1.6 \text{ DIVIDED BY THE CARRIER LIFETIME, } T_1$. For frequencies below $1/(2\pi T_1)$, the PIN diodes acts much like a regular diode. The result is that if the carrier lifetime can be made long enough, a PIN diode will not rectify RF. This makes it an ideal switching device for RF signals.

I tried looking up a 1N5179 in my D.A.T.A. Diode book. All it said was that it was a conventional silicon rectifier for currents around 1 amp and repetitive AC voltages of less than 20 volts. It is not a PIN diode.

However, a 1N5719 IS a PIN diode. It is designed for general purpose RF switching and attenuating. Its shunt capacitance in the off state is about 0.3 pF with 100 volts of reverse bias. Its breakdown voltage is 150 volts. The maximum series resistance is 1.25 ohms and the carrier lifetime is 100 nS. This makes it a good RF switch above 16 MHz but essentially useless below 160 meters.

PIN diodes, however, are designed NOT as receiver input protection devices but rather as a switch or attenuator. As such they can be built into a solid-state circuit that will replace a relay or conventional switch. It is possible to use low-frequency power rectifiers in solid-state T/R switches too. Very high values of bias current and back voltage are needed however to match the performance of simple PIN circuits.

The Ham Radio Magazine article Carl refers to describes the replacement of conventional silicon bandswitching diodes with PIN diodes to slightly reduce the internally generated IMD in some solid-state receivers. THIS HAS NOTHING TO DO WITH RECEIVER INPUT PROTECTION.

Actually it has nothing to do with Boatanchor receivers either. Modern solid-state receivers use broad-band circuits to obtain rapid frequency agility. Solid-state band switching is used for reasons of cost. Mechanical switches would be far better than even PIN diodes. [Hint: TV's all come with remote controls now because they are much cheaper to make than mechanical switches.]

One of the reasons for the good strong-signal performance of Boatanchor receivers is the fact that mechanical switches were used with sharply tuned circuits on the RF amplifier stage. The tubes, too, offer some improvement in linearity over conventional bipolar transistors. For really low levels of IMD, field effect transistors or the new ultra-linear bipolar junction transistors should be used. [FET's required push-pull circuitry to cancel out the even order distortion, however.]

To go back to the issue of receiver input PROTECTION, Sandy's suggestion is hard to beat for performance at low cost. Contrary to Carl's crude experiment, additional diodes in series WILL raise the floor above which IMD will be produced in abundance. However, since solid-state diodes follow a nonlinear characteristic over ALL operating conditions, they will ALWAYS produce IMD at ANY signal level. The trade-off, then is how much IMD can be tolerated and what is its relative level compared to the desired signals.

It is certainly possible to design an input voltage limiter with bias supplies. This will raise the dynamic range at the expense of complexity. Rarely is this necessary.

I would like to add several comments, though, about Sandy's circuit. Diode selection is not critical, but ordinary rectifier diodes are too slow in their switching characteristics to work well. Bargain basement 1N914/1N4148 diodes work well. Just remember to use a lamp rated for as low a current as possible - like those 40 mA miniature bulbs.

If anyone wishes to discuss this further, please email me directly at the address below. Remember <theporch.com> is running a listserver and that the message you receive is actually from that machine, not directly from me. Remember people, ALWAYS put your email address in your signature [but leave off the page of advertising]. And when your mail bounces, be sure and check the addresses.

73, Barry L. Ornitz WA4VZQ <ornitz@eastman.com>

From boatanchors@theporch.com Fri Jan 10 07:28:58 1997
From: Harry Vaught <hvaught@worldnet.att.net>
Subject: Receiver Protection Devices
Message-ID: <19970110024016.AAA12072@HVAUGHT2>

Gang,

I have a "Popular Electronics", August, 1960 issue which proposes an "Economy T-R Switch" which is like that described by Bob Ragain: a light bulb in series and a pair of polarity opposed 1N34's across the receiver antenna lead. All this was in a small Bud box with S0-239's and a hole cut

to see the light through. The article advises you to switch the receiver to "send" or "standby" to avoid an annoying "howl" when transmitting.

Harry Vaught, KT4AE
Lawrenceville, Georgia
hvaught@worldnet.att.net

Harry Vaught, KT4AE
hvaught@worldnet.att.net

From boatanchors@theporch.com Fri Jan 10 13:50:06 1997
From: Dale Braun <dale.k.braun@uwrf.edu>
Subject: RME 4301 Signal Slicer
Message-ID: <s2d63fa7.050@adngate.adn.uwrf.edu>

Folks,
Been having great fun and success taking care of radio projects of late.
Nearing the top of the list is some needed maintenance work on a RME 4301
signal slicer. This neat little gem is currently working with my RME 4350A
receiver, also a nice a little gem.

I have a hum on sideband 1, a somewhat reduced hum on the "both" setting, and
little to no hum on the sideband 2 setting. Before I get too far into the
circuit, I need a manual.

Would anyone have a manual they would be willing to copy and send to me for
duplication and shipping costs?

Thanks in advance.

73,
Dale
WD9GWH
Dale.K.Braun@uwrf.edu

From boatanchors@theporch.com Fri Jan 10 07:28:58 1997
From: eb5agv@ctv.es
Subject: Sale/swap: used TWINAX connectors and adapters
Message-ID: <1.5.4.16.19970110125855.227f2fbe@192.168.0.1>

Hi BA gang!

Well, I've got some (about 8) USED TWINAX connectors and some (3)
female-to-female TWINAX adapters (also used). As I only needed two TWINAX

and one adapter, I would like to sell or swap the other ones. By the way, I've 'recovered' one of the connectors easily, so they are still useful!. Things I would like are one 'C' connector (guess what rig I have here?) and any kind of BA related things (from manuals to SX-88 ;-)).

I've also LOT of meters of TWINAX cable, some of them NOS and some used, but in good condition.

Any offer?.

Best regards

JOSE

73 JOSE V. GAVILA (EB5AGV / EC5AAU)
46910 Benetusser - Valencia
SPAIN

QTH locator: IM99TK

*** PLEASE, VISIT MY HOME PAGE AT : ***
[http : //www.geocities.com/SiliconValley/6992](http://www.geocities.com/SiliconValley/6992)
e-mail: eb5agv@ctv.es & eb5agv@amsat.org

From boatanchors@theporch.com Fri Jan 10 13:50:06 1997
From: Ho4bart@aol.com
Subject: Re: selectivity for 6-9 "command receivers"
Message-ID: <970110104006_712756378@emout05.mail.aol.com>

In a message dated 97-01-09 15:03:19 EST, z931086@corn.cso.niu.edu (berg stephen erik) writes:

<< selectivity was rather awful, so I regenerated the first IF stage. I used a gimmick capacitor, and put a potentiometer into the cathode lead >>

i too have tried the gimmick cap route & i really was unhappy with it. i found it just too unstable and unable to deal with widely differing signal levels. also at 455 kcs with this idea. i've found q multipliers better but at low freqs, cw operation, at the peak selectivity, the ringing is godawful. i used a TCS station years ago with a Heath q mult. and when turned up full selectivity for 40m cw, it sounded like a rock-throwing fight in a railroad tunnel. hue miller

From boatanchors@theporch.com Fri Jan 10 13:50:06 1997
From: Ho4bart@aol.com
Subject: suggestion re shipping heavy radios
Message-ID: <970110122611_1526032901@emout09.mail.aol.com>

you'd think i get enuff of a keyboard all nite at the
data factory, but here i go.....

If you were working on an SX-28 (for example) on your
workbench, would you set it face down on your work-
bench, i.e. with the front panel against the surface? no?
how about setting it face down on a sheet of styrofoam?
probably not--you wouldn't want that much pressure on
the tuning knobs and shafts. well, consider the radio
inside the shipping box. for sure some part of its trip it's
going to drop on whatever side is the front panel, and the
drop can easily be 3 ft! when i ship heavies, or fragile,
i try to block the front panel off the inside of the box so
that the knob area is suspended inside a protected area
of loose packing. the blocking material (say, styrofoam
sheet pieces) around the edges of the front panel keeps
the knobs from absorbing the full impact of the fall. clear
as mud? probably too elementary for most of you and i
apologize if so. last year a fellow aficionado shipped me
a heavy receiver with substantial sheet foam around it,
but.....it arrived with the tuning shaft coupler broken, the
impact on the tuning knob of all that weight did it. i got on
this obsession years ago, when i had a bc-348 with an
actual bent tuning shaft. and if the set has a spinner knob,
why not ask the shipper to remove it and put it inside the
radio? the spinner just adds more leverage against the tuning
shaft when there's force against it.
sheet styrofoam is swell for packing, but it's not an
antigravity device. hue miller

From boatanchors@theporch.com Fri Jan 10 13:50:06 1997
From: Bob Duckworth <WB4MNF@atl.org>
Subject: RE: suggestion re shipping heavy radios
Message-ID: <01BBFEF6.A472AF90@office>

I ship by bus.
On the greyhound, a heavy radio is never more than a foot off the ground.
When the guys unload stuff they put it on small carts.
If it's heavy, it goes on the bottom.

Other advantages of the bus.

- 1)Almost every small town has a bus station. Much more common than UPS
- 2)Bus allows seller to ship freight collect so there is no pressure on the seller to try and figure the shipping costs.
- 3)Bus costs less than UPS. (except for insurance)
- 4)Bus is quick. Radio goes on the bus in the afternoon in Texas and I pick it up the following afternoon in Atlanta.
- 5)If you live in a larger town or on the route, the radio only rides one bus. less handling= less chance of damage.
- 6)If you know it's going on a direct bus, shipper can supervise loading and recipient can meet the bus and supervise unloading. Almost as good as driving your truck to go pick it up.

Disadvantage of bus.

- 1)Folks working at the bus station in Atlanta are either extremely overworked or disorganized so it usually takes about an hour to find a 100lb box. Smaller boxes take longer.....
- 2)Maximum insurance is \$1000/box so you might not want to ship that gold plated SX88. Also insurance is \$1/\$100. twice fed ex fees.
- 3)Bus does not deliver to your house. You have to go to the bus station.
- 4)Being only a foot off the ground, if the road is flooded and the bus proceeds, your radio gets wet. Maybe this is what happened to that R390A that was full of mud :-)

-bob
wb4mnf

From boatanchors@theporch.com Fri Jan 10 21:54:00 1997
From: Mike Toneri <toneri@ils.net>
Subject: Re: suggestion re shipping heavy radios
Message-ID: <1997011110046.TAA18681@server1.ils.net>

At 11:29 AM 1/10/97 -0600, Ho4bart@aol.com wrote:
>you'd think i get enuff of a keyboard all nite at the
>data factory, but here i go.....
>
>If you were working on an SX-28 (for example) on your
>workbench, would you set it face down on your work-
>bench, i.e. with the front panel against the surface? no?
>how about setting it face down on a sheet of styrofoam?
(rest deleted for brevity)

Some good advice on packing Hue. I have sent several heavy radios by UPS etc. and have done the same thing. Make sure the box is strong enough in the first place and large enough to place lots of isolating/shock absorbing material around the radio. I prefer a combination of styrofoam sheet,

Styrofoam chips and bubble pack. Remove the knobs and the tubes if possible and pack them separately. Some if not all of the tubes and knobs will sometimes fit inside the cabinet, if not I ship them separately. It only costs a couple of bucks more for the smaller package. Sent an HQ129X that way with no damage at all.

73...Mike VE3FGU

From boatanchors@theporch.com Fri Jan 10 13:50:06 1997

From: Mike Warren <71555.713@compuserve.com>

Subject: T-17 mic and Military BA sources

Message-ID: <199701100848_MC1-E6F-5E88@compuserve.com>

>Bob Duckworth was looking for a T-17 mic . . .

Just got a list in the mail from "The Bald Eagle", Bob McKowen, 215 S. Ave. C, Washington, IA, 52353, 319/653-5776. He has literally hundreds of pieces of WWII Radio (and Radar) equipment, mostly aircraft type. I think he runs a business called Classic Warbird Parts. Anyway, this is a 18 page catalog with a 2-page supplement and has just about every military item you can think of. Lots of the hard-to-find stuff like dynamotors, racks, mounts, filters, interphone amps, etc. -- in addition to the receivers, transmitters, and antennas. Prices are not cheap and lots are not even priced, but they look reasonable for a dedicated military collector.

Back to Bob's request: the catalog shows T-17 mics in "vg" N.O.S. condition for \$30, item number "R-29". Also RS-38 (NAF 213264-6) with cable and plug, "Brand New", \$40, item # R-193.

Also, while I have the floor, I got another military listing in the mail yesterday from Compass Electronics Supply, 465 Market St., Paterson, NJ 07501, 201/278-7777. Some BIG BA's in this list! A TDH-4 Collins 4KW AM 2-32 MHz, 3 pcs at 2800lbs in VG cndx (no price listed). Also SRT-13, 14, and 15's for \$400; BC-365 (600lbs and \$600); BC-447 (870lbs, \$600). Some rcvrs: RAL, RBA, RBH, RBO, RBS, RCH, RCK, SLR, SRR-19, URR-27, ARC-3 and an AN/FRR-60 Dual Diversity COMPLETE setup in 19" rack (\$2500) -- are these TMC GPR-90's? Lots of other stuff - big to small, and for Bob, a "TS-11 Handset", \$15.

Oh, one more thing -- Compass's catalog also lists tubes, with quite a few transmitting, e.g. 813's for \$27, 807's for \$10, etc. (but his 860's are \$205).

73, Mike, W5MAZ (in MN)

From boatanchors@theporch.com Fri Jan 10 13:50:06 1997
From: Hans Jense <jense@eos.arc.nasa.gov>
Subject: Thanks for info on Knight KG-600C manual
Message-ID: <199701101934.LAA02994@eos.arc.nasa.gov>

Many thanks to all that replied to my query about a manual for my newly acquired Knight KG-600C tube tester. Several people turned out to have the -A or -B version and offered to provide a copy. Finally it turned out Mike Tannenbaum did have the manual for the -C version...only it wasn't on his list. I ordered one from him and expect to receive it sometime next week.

-- Hans

```
=====
Dr. G. J. Jense      | Command & Control and Simulation Division
Senior Scientist     | TNO Physics and Electronics Laboratory
Virtual Environments | The Hague, The Netherlands
-----
```

Currently on leave at:

NEA

Human and Systems Technology Branch
NASA Ames Research Center
Code AFH, Mail Stop 262-2
Moffett Field, CA 94035-1000

Phone: (415) 604-1877
Fax: (415) 604-3729
Email: jense@eos.arc.nasa.gov

```
=====
From boatanchors@theporch.com Fri Jan 10 07:28:58 1997
From: Neal McEwen <nmcewen@metronet.com>
Subject: TTY machine needed for TV film
Message-ID: <32D55BE6.2379@metronet.com>
```

BAers, I got this email from a fellow doing a TV documentary.
Hopefully someone on this list can help him. Contact him, not me!

My name is James Ottaway (JOTT@PIPELINE.com) and I working on a
documentary

film about the Cold War and the Rosenberg spy ring that will appear on the Discovery Channel in the Spring of 1997. I am currently looking for one or two WORKING teletype machines used by Western Union in the 1940s. I am told that model 10s and model 15s were used. I am not concerned with the model as long as it was used by Western Union during that era. In our program we wish to recreate the sending of messages by Soviet officers from New York to Moscow. (Yes, surprisingly enough they used Western Union.) Many of these messages were decoded in the famous VENONA project. For those interested type "VENONA" in any search engine (I use ALTAVISTA); many of the decoded messages were just put on the world wide web.

I have tried many of the usual suspects such as the Smithsonian (they have them but they are in 'irretrievable storage'), the American Wireless Association museum in upstate New York (they have two but they are no longer working) and the American Radio Relay League (also have one but it is no longer working), and my Uncle who is a ham radio operator (he had one but he sold it ten years ago).

If you know any one who could help me with this I would appreciate any assistance. Thank you.

James Ottaway jott@pipeline.com
tel. 212-879-2046

--

73 de K5RW, Neal McEwen, at "The Telegraph Office", nmcewen@metronet.com
A WWW Page for Telegraph Key Collectors and Historians
http://fohnix.metronet.com/~nmcewen/tel_off.html

From boatanchors@theporch.com Fri Jan 10 07:28:58 1997
From: bdhall@ghg.net (Benjamin D. Hall)
Subject: Re: Vibrator woes...
Message-ID: <32D5970C.723B@GHG.net>

Tom LeMense wrote:

Hi Tom and list...

> I have some general questions about restoration of old DC powered BC
> and SW radios, circa 1937. Both sets that I have are 6VDC powered
> with vibrator HT "switching" supplies. These are non-ham, consumer
> get some pointers. I would like to run the two sets that I have from AC
> power.

(description of B+ supply snipped)

Let me preface my remarks to say that I'm a mechanical engineer and I've worked on only one vibrator set. But, if I'm not mistaken, the purpose of the vibrator is to switch the 6V DC on and off so that you can get magnetic flux in a separate transformer so that you can make B+, right? If so, couldn't you just replace the vibrator with the secondary of a 120 VAC to 6 VAC transformer? If it would work it would get rid of the noisy vibrator, and be a pretty simple solution...

Comments anyone? I'm pretty tired from working 50% duty cycle lately, so perhaps I'm missing something here?

73,
Ben
--

From the computer of	Collector of fine firebottle
Benjamin D. Hall, Houston Texas	equipment, as well as other things
BDHall@GHG.net (home) -or-	involving Earth, Air, Water, and
Benjamin.D.Hall1@JSC.NASA.gov	Fire.

PLEASE NOTE MY NEW HOME E-MAIL ADDRESS above. My old address, BDHALL@GHGCorp.com, will still work for a period of time however.

From boatanchors@theporch.com Fri Jan 10 07:28:58 1997
From: pmills@A.crl.com (Phil Mills)
Subject: Re: Vibrator woes...
Message-ID: <199701100148.AA04099@A.crl.com>

>
>Let me preface my remarks to say that I'm a mechanical engineer and I've
>worked on only one vibrator set. But, if I'm not mistaken, the purpose
>of the vibrator is to switch the 6V DC on and off so that you can get
>magnetic flux in a separate transformer so that you can make B+, right?
>If so, couldn't you just replace the vibrator with the secondary of a
>120 VAC to 6 VAC transformer? If it would work it would get rid of the
>noisy vibrator, and be a pretty simple solution...

>

>Comments anyone? I'm pretty tired from working 50% duty cycle lately,
>so perhaps I'm missing something here?

Hello Ben & list,

Let me preface my remarks by saying that they are based on perusing the manuals for a Comco BA 132mc-150mc mobile 2-way unit that I've been working on with the view to using as a base station in my shop to listen/talk to the local repeater. This particular unit has a vibrator based power supply and is intended to run off of a 12 volt automotive system. The manual shows how to wire the various jumpers so that 10 vac can be supplied to the transformer for B+ purposes with a separate 12.6 vac transformer for the tube filament string. Based on this, I would suspect that suitably sized 5 vac and 6.3 vac transformers could be used for a 6 volt automotive radio....probably in light duty service it would definitely work okay and I would not be concerned unless I intended to use the subject radio for extended periods of time.

thanks & 73,
Phil

Phil Mills, AB5TH ***** *****
pmills@a.crl.com
281-992-5762 days
Friendswood, TX (south of Houston)

From boatanchors@theporch.com Fri Jan 10 07:28:58 1997
From: Bob Roehrig <broehrig@admin.aurora.edu>
Subject: Re: Vibrator woes...
Message-ID: <Pine.ULT.3.95.970109212057.10202B-100000@admin.aurora.edu>

On Thu, 9 Jan 1997, Benjamin D. Hall wrote:

> But, if I'm not mistaken, the purpose
> of the vibrator is to switch the 6V DC on and off so that you can get
> magnetic flux in a separate transformer so that you can make B+, right?
> If so, couldn't you just replace the vibrator with the secondary of a
> 120 VAC to 6 VAC transformer? If it would work it would get rid of the
> noisy vibrator, and be a pretty simple solution...

In a way you are correct. I have done exactly that quite a few times many years ago. One problem is that vibrators run (if I recall correctly) around 115 Hz. So we have a similar problem as we would have trying to run 400 Hz military gear from 60 Hz - overheating.

As I said I did it in the past and had no problems, but I would be careful.

E-mail broehrig@admin.aurora.edu 73 de Bob, K9EUI
CIS: Data / Telecom Aurora University, Aurora, IL
630-844-4898 Fax 630-844-5530

From boatanchors@theporch.com Fri Jan 10 07:28:58 1997
From: Al Klase <alklase@prolog.net>
Subject: Re: Vibrator woes...
Message-ID: <199701100342.VAA10073@uro.theporch.com>

At 07:12 PM 1/9/97 -0600, Benjamin D. Hall wrote:

>Let me preface my remarks to say that I'm a mechanical engineer and I've
>worked on only one vibrator set. But, if I'm not mistaken, the purpose
>of the vibrator is to switch the 6V DC on and off so that you can get
>magnetic flux in a separate transformer so that you can make B+, right?
>If so, couldn't you just replace the vibrator with the secondary of a
>120 VAC to 6 VAC transformer? If it would work it would get rid of the
>noisy vibrator, and be a pretty simple solution...

>

>Comments anyone?

Let me preface this by saying that I'm not an expert on vibrator power supplies either. However, I tried this once, when I was just a squirt, with the radio from our defunct '51 Packard. After about three day the transformer smoked big time. 30 years of 20-20 hind sight suggests to me that the transformer wasn't designed to operate at 60 cycles. I seem to remember some reference saying that standard vibrators run at 110 cps or so. I have seen some radios designed to work on 60Hz or vibrator and DC, but don't think I'd try it with a vibrator only set.

Also, does anyone know anything about rejuvenating vibrators by running the vibrator only from 120V 60Hz with a 60 watt bulb in series. The claim was that the contacts became contaminated by the sulfur from the foam rubber inside the vibrator, and this procedure would burn them clean.

73, Al

Al Klase - N3FRQ
alklase@prolog.net
Flemington, NJ

From boatanchors@theporch.com Fri Jan 10 07:28:58 1997
From: Morris Odell <morriso@vifp.monash.edu.au>
Subject: Re: Vibrator woes...
Message-ID: <32D5C267.23C9@vifp.monash.edu.au>

Hi all,

Bob Roehrig wrote:

>

```
> One problem is that vibrators run (if I recall
> correctly) around 115 Hz. So we have a similar problem as we would
> have trying to run 400 Hz military gear from 60 Hz - overheating.
```

This is quite true and you need to be mindful of the effect of frequency. There are special transformers that were used in dual power supplies such as the one in my BC221 which accepts 50Hz AC and has separate windings for the 6 volt vibrator supply.

Another trick is to build a sand state converter using the vibrator transformer. I won't go into it any further here except to say that you can tweak such a converter to run at the right frequency for the transformer with proper design.

73

Morris VK3D0C

Morris Odell
Forensic Physician
morriso@vifp.monash.edu.au
Australia

Victorian Institute of Forensic Medicine
57-83 Kavanagh St, Southbank 3006
Victoria,

Web page: <http://www.vifp.monash.edu.au/CFM/staff/mo.html>

From boatanchors@theporch.com Fri Jan 10 07:28:58 1997
From: vancleef@netcom.com (Henry van Cleef)
Subject: Re: Vibrator woes...
Message-ID: <199701100526.WAA27926@netcom17.netcom.com>

As Tom LeMense discourses

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> Howdy all,
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> I have some general questions about restoration of old DC powered BC
> and SW radios, circa 1937. Both sets that I have are 6VDC powered
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> with vibrator HT "switching" supplies. These are non-ham, consumer
> type tube radios, and I would like to draw on the experience of the list to
> get some pointers. I would like to run the two sets that I have from AC
> power.

Home entertainment radios with 6 and 32 volt vibrator supplies were quite common in the thirties. Some of these were made to be operated from either DC or 120 VAC 60 cycle power.

There are two areas to consider when trying to run the vibrator transformer on AC. One is that vibrators ran at 110-120 cycles, not 60, and the transformer may not have enough iron. This is a major consideration with automobile and aircraft radios, where small transformers were purposely used. Home entertainment sets may have enough iron.

Second major issue is that the transformer for 6 volt operation is actually 12 volts center tapped. If you try to drive it from one side from the center tap, you are putting all the losses in half the primary, which will overheat it after a while.

You can pretty well count on having overheating problems with postwar Delco auto radios on 60 cycle power on one side of the transformer. Motorola and Philco sets do better. Home entertainment, particularly if built by one of these two, may also do better. You can try it out and see how hot the transformer gets.

>

> I have one vibrator (the other was missing) and it makes an awful racket,
> which I am told means that it must be working just fine! :-). I have to use
> an awful big 6VDC supply (about 50W) to make this work, and it seems
> that I might be better off if I did one of the following:

Yes, vibrators are both hi fi and loud. Best setup for running something like this is a 6 volt lead-acid battery with a 10 amp charger on it. Primary voltage should be 7.2 volts---proper voltage for a 3-cell lead-acid battery and generator supply. Chargers use high impedance to limit current, not the same as trying to run from a low impedance filament transformer. The battery presents farads of effective capacitance for filtering.

>

> I've been toying with the idea of making a 6V/ B+ DC supply (using
> xformers from other old radio carcasses) and "injecting" the B+ and
> filament voltage via a 4-pin plug into the rectifier socket (after, of course,
> removing the rectifier tube and vibrator). This seems like it would be a
> good way to go, as it wouldn't involve any permanent modifications
> whatsoever to the set, but I don't know if I will run into any problems with
> this as far as operation goes.

If you want to use an external power supply, you can generally use AC on the tube heaters, and 250 volts. Current requirement at 250 volts is around 75 ma. for a set with a 42 or 6V6, 90 ma. if push-pull. An 80 supply will handle either. If the set has a rectifier (usually one of the 6 volt heater-cathode types or an (ugh!) 0Z4. You'll need to inject the B+ at the rectifier socket cathode pin, not the vibrator.

Sets using a synchronous vibrator get B+ on the synchronous output at the vibrator---no rectifier used.

>

> I've also seen solid-state vibrator replacements (e.g. AES has a couple)

> -- are these a good thing? They tend to be kind of pricey, anyone have

> any experience with these things?

>

Yes, they are quite simple multivibrator setups that more-or-less duplicate the vibrator output waveform. Synchronous replacements have rectifier diodes inside as well.

If you are going to use a switcher on DC---either a vibrator or a solid state replacement, REPLACE THE BUFFER CAPACITOR. This is a 1600 volt cap across the transformer secondary. Sprague makes high voltage orange drops, and I think you can get them in the proper values. 90% of failures in auto radios involved vibrator, buffer capacitor, and 0Z4. Standard repair was to replace all three, no matter what the diagnosis, if there were power supply troubles. 84/6Z4, 6X5, and 6X4 were the standard vacuum rectifiers used in these supplies, and one "fix" for Delco 0Z4 problems was to wire up the heater leads and use a 6X5. Unfortunately, Delco took to omitting the pin 2 and 7 contacts on rectifier sockets, to prevent people from making this mod and adding the heater current to the A circuit---which tends to be a bit marginal, particularly at the power switch.

So far as I know, the major manufacturers of 6 and 32 volt DC sets were auto radio manufacturers, Philco and Motorola, who used similar technology in their home entertainment sets.

--

=====

Hank van Cleef

E-mail vancleef@netcom.com or vancleef@tmn.com

=====

From boatanchors@theporch.com Fri Jan 10 07:28:58 1997

From: Scott Robinson <spr@earthlink.net>

Subject: Re: Vibrator woes...

Message-ID: <[v03007803aefb1674dd5b@\[153.34.139.251\]](mailto:v03007803aefb1674dd5b@[153.34.139.251])>

Tom and other listees,

A long time ago-about 1959-I converted a 6V car radio for a shop radio for a neighbor. It still works...

The process is VERY simple. Remove vibrator. Make a dummy plug to use in place of the vibrator that straps one of it's moving contacts to the stationary contact, connecting the filament line to half of the power transformer primary. Apply 6.3 VAC (yes, AC) to the battery terminal, and listen away. You'll need about an 8-10 amp filament transformer.

This WILL NOT work with a radio (mainly Buick) that uses a synchronous vibrator. You'll need two diodes in addition with this kind tyo rectify the B+. If the radio uses a 6X5 or 0Z4, it ain't a synchronous vibrator machine.

Any time you want to run DC for old times' sake, plug the vibrator is and connect 6 V DC.

I remember some discussion on R+P about this, and claims that it would not work very well, but this one has done for over 30 years.

Regards,

Scott Robinson
spr@earthlink.net

"Wait'll he puts on his stereo headphones..."

From boatanchors@theporch.com Fri Jan 10 13:50:06 1997
From: Ho4bart@aol.com
Subject: Re: Vibrator woes...
Message-ID: <970110111124_37977056@emout01.mail.aol.com>

In a message dated 97-01-09 22:25:35 EST, broehrig@admin.aurora.edu (Bob Roehrig) writes:

<< have trying to run 400 Hz military gear from 60 Hz - overheating.
>>

i remember reading a conversion article on the apn-4 loran to
hamband receiver (not "contest grade"). the orig 400 cps xfmr
was used with a large lightbulb in series with it. how's that for a
hi class conversion? hue miller

From boatanchors@theporch.com Fri Jan 10 13:50:06 1997
From: Ho4bart@aol.com
Subject: Re: Vibrator woes...
Message-ID: <970110112400_1241905772@emout11.mail.aol.com>

In a message dated 97-01-09 23:18:09 EST, morriso@vifp.monash.edu.au (Morris Odell) writes:

<< Another trick is to build a sand state converter using the vibrator transformer. I won't go into it any further here except to say that you can tweak such a converter to run at the right frequency for the transformer with proper design. >>

i've seen at least 2 articles on this. one was in PE for sure, and around 61-64 if i remember. and.....they never worried about frequency atall! just so long as it oscillated seemed to be fine. probably the constants put it in the hi audio range anyway so there was no danger of the xmfr smoking. ("leaking its smoke") the pe ckt used 2 big TRANSISTORS ("Tiny Radio Amplifiers Never Surviving Intermittent Surges, Transients, Or Re Soldering"), 4 bias R's, and a small xmfr, audio interstage i think or output, to couple feedback back to the bases. hue miller

From boatanchors@theporch.com Fri Jan 10 13:50:06 1997
From: Bob Duckworth <WB4MNF@atl.org>
Subject: RE: Vibrator woes...
Message-ID: <01BBFEEC.36504DB0@office>

I have been thinking along the same lines as Bobbi and that a full wave rectifier using SCRs (or tube equivalents :-)
instead of diodes would result in a reasonably balanced 120Hz AC from 60Hz if the SCRs were set to turn on at say $0.7 \times V_{peak}$ of the 60Hz. A small cap would keep the higher frequencies at bay.

-bob
wb4mnf@atl.org

From boatanchors@theporch.com Fri Jan 10 13:50:06 1997
From: Ho4bart@aol.com
Subject: Re: Vibrator woes...

Message-ID: <970110123134_1308979565@emout17.mail.aol.com>

In a message dated 97-01-10 12:13:12 EST, WB4MNF@atl.org (Bob Duckworth) writes:

<< a full wave rectifier using SCRs (or tube equivalents :-)
instead of diodes would result in a reasonably balanced 120Hz
AC from 60Hz >>

maybe i'm tired from being up all nite, suffering brain fade, but
how are you getting 120 hz AC from a fullwave rectifier?
the vibrator's friendly power xfmr isn't going to be happy with
pulsating DC. hue miller

From boatanchors@theporch.com Fri Jan 10 13:50:06 1997
From: Tom LeMense <LEMENST@fhsmtp.fh.trw.com>
Subject: Re: Vibrator woes... -Reply
Message-ID: <s2d61484.092@fhsmtp.fh.trw.com>

Thanks to all for the quick replies!

The two sets in question are home sets, one is a Ward's Airline (with
neato "movie dial" display) and the other is a nice little Crosley. Both
were meant to run off of 6VDC, and are largish/fragile enough to be
undesirable as "portables"! Besides, that's what my Transoceanic is for!

>>> Benjamin D. Hall <bdhall@ghg.net> 01/09/97 08:10pm >>>
>...couldn't you just replace the vibrator with the secondary of a
>120 VAC to 6 VAC transformer? If it would work it would get rid of the
>noisy vibrator, and be a pretty simple solution...

I am fairly certain that 60cps would toast the miniscule amount of iron
present in both sets. In fact, the Crosley appears to have no transformer
at all -- just a choke. (it's all *packed* into a smallish tombstone, so it's a
bit hard to see exactly what is what). The schematic that I traced out for
this set looks a lot like some of the capacitive discharge ignition systems
that I've seen: build up a large voltage in a cap via a rectifier, smooth it
out with a coil into DC. Henry Van Cleef has some comments about this
in his reply.

>>> Henry van Cleef <vancleef@netcom.com> 01/10/97 12:26am >>>
>...There are two areas to consider when trying to run the vibrator
>transformer on AC. One is that vibrators ran at 110-120 cycles, not
>60, and the transformer may not have enough iron. This is a major

Ah! That is a helpful bit of information -- I wasn't sure just what
frequency these crazy things buzzed at. 120cps is certainly far too

audible for my tastes!

>Yes, vibrators are both hi fi and loud. Best setup for running something
>like this is a 6 volt lead-acid battery with a 10 amp charger on it.
>Primary voltage should be 7.2 volts---proper voltage for a 3-cell
>lead-acid battery and generator supply.

I suppose the 7.2 volts would explain why there are some rather large
wattage series resistors between the battery feed and the parallel 6V
filaments!

>If you want to use an external power supply, you can generally use AC
>on the tube heaters, and 250 volts. Current requirement at 250 volts is
>around 75 ma. for a set with a 42 or 6V6, 90 ma. if push-pull. An
>80 supply will handle either. If the set has a rectifier (usually one of the
>6 volt heater-cathode types or an (ugh!) 0Z4. You'll need to inject the
>B+ at the rectifier socket cathode pin, not the vibrator.

Would there be any possible advantage in using DC for the heaters? My
concern was that that was how the set originally operated, so it may not
be as robust in the "hum suppression" department as line operated sets.
It would be a simple enough matter for me to generate 6V (7.2V?) and
inject across the rectifier heater pins. This low voltage supply would be
sand-state, probably some series regulator with a soft-startup. I think
that a rectifier tube (some indirectly heated type would be best, to avoid
a potentially "hot" chassis) would be dandy for the B+ supply, which
would insure that all heaters are up and running before the B+ comes up.

>Sets using a synchronous vibrator get B+ on the synchronous output at
>the vibrator---no rectifier used.

..

>So far as I know, the major manufacturers of 6 and 32 volt DC sets
>were auto radio manufacturers, Philco and Motorola, who used similar
>technology in their home entertainment sets.

Maybe I need to re-trace the crosley, because that beast is definitely not
laid out as I expected it would be. Perhaps it uses a synchronous
vibrator. It's been a while since I paid much attention to that set -- I've
been focusing on the Airline (it also needed some woodwork), which
seems to be much more straightforward.

Thanks again!

-tom

Thomas LeMense * Sr. Project Engineer

TRW Automotive Electronics Group
Farmington Hills, Michigan facility
810.615.7822 * 810.478.7241 fax
internet: lemenst@fhsmtp.fh.trw.com

From boatanchors@theporch.com Fri Jan 10 13:50:06 1997
From: "Roberta J. Barmore" <rbarmore@indy.net>
Subject: Re: Vibrator woes... -Reply
Message-ID: <Pine.SUN.3.91.970110101419.5689B-100000@indy1>

Hi!

I'm going to ask a really stupid question here, but it just struck me--if the vibrators were running at 120cps, would one be able to use the *unfiltered* output of a FW rectifier running from 60cps and the proper voltage?

The first flaw is that waveshape and duty cycle might eat this notion's lunch; but that might be get-aroundable by operating at reduced voltage. The second problem is sort of a subset of the first--any filtering is going to make the "on" time all the worse. I'm sure there are other problems as well, but if someone with greater knowledge of vibrator supplies wants to consider if this might work, I'd love to hear about it!

73,
--Bobbi

(This comes from thinking, "gee, if was low-level RF, 120cps would be easy to get from 60cps with a push-push doubler..." and then realizing what a sand-type passive doubler turns into when scaled to 60cps.)

From boatanchors@theporch.com Fri Jan 10 13:50:06 1997
From: "Roberta J. Barmore" <rbarmore@indy.net>
Subject: Re: Vibrator woes... -Reply
Message-ID: <Pine.SUN.3.91.970110141358.14927E-100000@indy1>

Hi!

Okay, either *i've* got brain-fade or this is a workable notion.

First, consider the situation with the vibropak functioning as Professor

Vibro intended: CT primary on the transformer, with the CT grounded; the ends of the primary go to individual, opposed contacts on the vibrator itself, while the armature (the movin' part) of the vibrator goes to +6VDC.

In operation, the vibrator reed/armature/thing starts out on one set of contacts, dumps in a slug of 6V juice, and goes sailing over to the other, where it does the same and then returns to start again. So each end of the primary sees a square-wave of less than 50% duty cycle and at half the rate at which the reed is moving. Net effect, a crummy three-step (6V, 0V, -6V) sine wave across the primary. Average value across either half of the primary is going to be less than 3V if I remember right. (And net DC is zilch, as many have pointed out).

Okay. Now, what happens if we take a center-tapped transformer secondary, of say about 8 or 9V, ground the CT and put diodes in series with each of the ends of the windings, then examine what we get? Looks like a slug of 4.5V juice outta one diode, followed by the same thing from the other, at 2X the line freq. This is very much the same thing we saw from the vibrator. And if my math isn't messed up, the average value of 4.5V half-sines is going to be pretty close to 3V--but that'll want reality-testing.

ASCII art never works (do any two people use the same font now?), but if you hook the diodes (and the 120:9V xfr ahead of 'em) from the above paragraph to the vibropack transformer primary, it should work. Unless I'm wrong again. But the net DC component over time across the vibropack xfr is back to zilch again, which was the whole objective of the exercise.

73,
--Bobbi

From boatanchors@theporch.com Fri Jan 10 21:54:00 1997
From: "David A. Cooley" <cooldave@ipass.net>
Subject: Re: Vibrator woes... -Reply
Message-ID: <1.5.4.32.19970110215807.00695574@mail.ipass.net>

At 01:44 PM 1/10/97 -0600, you wrote:

>
>Hi!
>
> Okay, either *i've* got brain-fade or this is a workable notion.
>
> In operation, the vibrator reed/armature/thing starts out on one set of
>contacts, dumps in a slug of 6V juice, and goes sailing over to the other,
>where it does the same and then returns to start again. So each end of
>the primary sees a square-wave of less than 50% duty cycle and at half the

>rate at which the reed is moving. Net effect, a crummy three-step (6V,
>0V, -6V) sine wave across the primary. Average value across either half
>of the primary is going to be less than 3V if I remember right. (And net
>DC is zilch, as many have pointed out).

>

> Okay. Now, what happens if we take a center-tapped transformer
>secondary, of say about 8 or 9V, ground the CT and put diodes in series
>with each of the ends of the windings, then examine what we get? Looks

This may work, if both diodes cathodes go to the vibrator transformer, but the problem you'll have is core saturation... With the vibrator, the current is totally interrupted after it is applied to one half of the xformer... this allows the field to collapse totally before the current is applied to the other half... with the diodes, there is no sudden collapse of the magnetic field, as it follows the latter half of the positive half wave... Just as it reaches zero (there is still a magnetic field collapsing) the current flows from the other diode through the opposite half... without total collapse of the field, there will be reduced voltage induced in the secondaries... what would work (theoretically) is a 12V CT xformer, and a 6v zener in series with the regular diode... then you would have a sudden 6V surge on one half, then dead time, then a 6V surge on the other... Need some good sized zeners though...

Later,
Dave

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=====
David Cooley N5XMT                Packet: N5XMT@W4RAL.#RTP.NC.USA.NOAM
Internet: cooldave@ipass.net      And Web: http://www.ipass.net/~cooldave/
Sponges grow in the ocean... Wonder how deep it would be if they didn't!
=====
```

From boatanchors@theporch.com Fri Jan 10 13:50:06 1997
From: Jack Harper <jharper@bs2000.com>
Subject: Vibroplex Case...
Message-ID: <199701101828.LAA22911@lynx.csn.net>

Greetings all Vibroplex fans...

Yesterday (Thursday), I posted a FS for a Vibroplex case for \$15 plus postage... So far, I have received about 20 responses.

However -- I want to make something very clear -- this is NOT a beautiful wooden box with felt insides (which, IMHO, Vibroplex clearly should provide for their great keys -- and did years ago). It is a rather ugly but functional cheap-looking black plastic case with cutout foam interior -- all in pristine shape. That is why I said in the original post that it is "black

plastic"... FWIW, I traded my original bug away some years ago (stupid move -- too much rum I think) and recently bought a new iambic Vibroplex paddle to use with my almost working Hammarlund keyer -- and want to buy the "cheap looking black plastic" case from Vibroplex (for \$39.95) that will fit and protect the paddle -- that's why I am selling this case...

One reply that I received contained the following:

>I initially assumed the case is the same as my other cases of 50's vintage.
>That is, hard shell case with a felt liner, and a chrome latch.

>After re-reading your message, it seems that a plastic case with foam
>is not of the same design I currently have. I was looking for more
>of the same design for use with some of my older keys. So if I am
>indeed correct, I would like to pass on my original offer to buy it.

I don't want to mislead anyone when they send me \$15 plus postage and receive this "cheap looking black plastic" thing -- it works and provides very good protection for the key -- but is not something to place on the mantle for display (unless you are into black plastic)...

So -- if you sent me an e-mail wanting to buy the case and now realize that you don't want it -- do not be shy about letting me know -- no problem (will my 20-responses now drop down to 2??).

However, Saturday night at midnight, I will compile all of the responses (and hordes of withdrawals?) and decide which person to sell the case to. This I will do purely at random -- the responses will be numbered 1,2,3... n and my HP48 calculator will happily pick a random number between 1-n.

I hope that I did not get a lot of folks hopes up about finding a nice beautiful felt lined 50's vintage Vibroplex box -- I would absolutely love to have such a thing myself if someone has one available that would fit the paddle...

Regards to all

Jack, KC0LR (Friend to all things Hammarlund -- and Vibroplex -- except for their modern "cheap-looking black plastic" cases)

Jack Harper
e-mail: jharper@bs2000.com
voice: 303-277-1892 fax: 303-277-1785

Bank Systems 2000, Inc.
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1024-bit PGP crypto key with ID: 8FB07075 created 960728
Fingerprint: 75 DA 06 35 F8 3D AC EC 3A F2 7C 59 A1 11 A5 74
Key available from Public Key Servers and above Web Page

From boatanchors@theporch.com Fri Jan 10 07:28:58 1997
From: lkayser@rideau.net (Larry Kayser)
Subject: Wanted Tube Info and Tube Needed - EL32
Message-ID: <199701100424.XAA12760@mail.peterboro.net>

Greetings:

I need to know a little about the EL32 tube, basing, filament voltage and current, what is connected to top cap, grid or plate?

Next I need an EL32...well actually two of them if possible it would be nice to have a spare....

Larry
va3lk / wa3zia

From boatanchors@theporch.com Fri Jan 10 07:28:58 1997
From: Scott Robinson <spr@earthlink.net>
Subject: Re: Wanted Tube Info and Tube Needed - EL32
Message-ID: <v03007804aefb198a96e3@[153.34.139.251]>

Larry,

EL32 characteristics:

heater 6.3V 0.2A

typical operation:

250 V plate and screen

bias -18V

32 mA plate, 5 mA screen

70K Rp

Gm 2800 uMhos

suggested cathode bias resistor 485 ohms

load impedance 8K

output 3,6 W at 10% distortion

basing:

heater 2,7
cathode 8
plate 3
screen 4
cap = grid.

The British source I checked hadn't very many of them but they were only about 4 bucks. Email me for where to get stuff like this.

Regards,

Scott Robinson
spr@earthlink.net
"Wait'll he puts on his stereo headphones..."

From boatanchors@theporch.com Fri Jan 10 21:54:00 1997
From: Jay Coward <jayc@hpcmrd42.sj.hp.com>
Subject: WTB
Message-ID: <9701102226.AA02790@hpcmrd42.sj.hp.com>

Greetings to the Group,
I'm looking for an accessory for my PRC-6
which is used to align the unit.
Channel Alignment Indicator ID-292/PRC-6
It's not an absolute necessity but it would be
nice to have one. The Loop antenna would also
be a nice addition to the set.
Hope to get this one on the air at the next swap
at Foothill. Anyone else have one and what freq.
would be useful for a swap net at the swap on
6M?
Thanks & 73, Jay

From boatanchors@theporch.com Fri Jan 10 07:28:58 1997
From: Ronnie Hull <larebel@ms1.nwla.com>
Subject: WTB Drake 2NT
Message-ID: <1.5.4.16.19970109201033.23479e5a@ms1.nwla.com>

Anyone got one of these little jewels they will turn loose of?

Ronnie - W5SUM

From boatanchors@theporch.com Fri Jan 10 07:28:58 1997
From: Bob Lucas <boblucas@netins.net>
Subject: WTB: Drake 2C
Message-ID: <199701100040.SAA24257@insosf1.netins.net>

Looking for Drake 2C, need not be mint cosmetically, but must work.

From boatanchors@theporch.com Fri Jan 10 21:54:00 1997
From: Mike Maloney <ac5p@ionet.net>
Subject: WTF/6AR8 Tube Specs?
Message-ID: <199701102316.RAA15895@mail.ionet.net>

Does anyone have specs on the 6AR8?
It sure makes a fine balanced product detector, but I wonder if my 250vdc on the plates may be a bit much? My '55 handbook only gives base pin out and heater volts and amps.

From boatanchors@theporch.com Fri Jan 10 13:50:06 1997
From: "Paul Bock" <pauboc@smtpink.pulse.com>
Subject: WWV & funky prop - NOT!
Message-ID: <9700108529.AA852917004@smtpink.pulse.com>

On Wednesday evening about 0030 UTC, I happened to check the status of WWV 10 MHz and found it as on the two previous nights, i.e., basically not there - well, *something* was in there, but so weak it was unreadable.

Around 0230 I was fooling with the BC-348, contemplating a realignment session this weekend, when I happened to tune across 10 MHz and BINGO! There was WWV, rolling in like gangbusters! I quickly ran a check on the R-4A, and on the sandbox upstairs, and got the same results.

It was still rolling in last night (Thursday) as well. Of course, 5 MHz is more stable and exhibits less QSB, but 10 MHz is definitely on the air.

So, I am of the opinion that WWV was, in fact, off the air on 10 MHz for a matter of days, and the very weak background signal which

was occasionally strong enough to "sound like" the ticking tone was actually WWVH in Hawaii.

Can anyone verify this?

73,

Paul, K4MSG